

Ministry of Agriculture Annual Report 1982

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REPUBLIC OF THE PHILIPPINES

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Introduction

During the year in review, the Ministry of Agriculture strove to maintain the production gains of the 70's and ensure the continued upgrading of the well-being and incomes of the farmers through a series of creative strategies designed to increase rural incomes and improve nutrition.

However, as agriculture continues to advance and expand technically and considerably so do new problems crop up. Because agriculture is the backbone of the Philippine economy and, therefore, requires continuous and intensive reassessment to ensure its balanced growth, new meaningful operational methods and new services which will produce swift and far-ranging benefits shall have to be developed and introduced.

Thus, in 1982, the Ministry of Agriculture conducted a thorough evaluation of its Masagana 99 rice production program to thresh out the problems from within and to meet changing needs after eight years. It, therefore, evolved new farming systems and technologies, created livelihood opportunities for the farming population, and worked for the improvement of the nutritional status of the families in the countryside.

By and large, the level of agricultural development in 1982 has been satisfactory. Along with self-sufficiency in rice as a result of the Masagana 99 program, the country is now self-sufficient in white corn but has met with limited success in the production of yellow corn. With the Ministry of Agriculture spearheading the launching of the Masagana program in late 1981, backed by a proven package of technology, the availability of high-yielding seed varieties and hybrids, adequate credit, a well-trained extension force, and full-marketing support, the country is expected to be self-sufficient in two years' time. A surplus production for export is expected after three years.

The livestock industry has produced enough supply of poultry and pork; we have also started moving towards self-reliance in milk, dairy and dairy products to reduce our heavy dependence

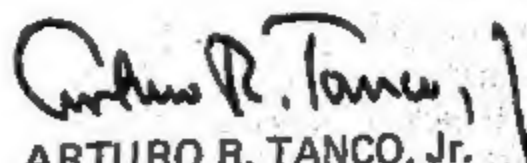
on imports and to provide better nutrition particularly for the very young, as well as pregnant and lactating mothers; and our export expansion program continues to generate foreign exchange earnings from both traditional and non-traditional exports.

On the other hand, the performance of the various agricultural commodities had been very encouraging as the Ministry of Agriculture continues to relentlessly pursue a program that would encourage the export of some semi-processed goods and non-traditional crops like banana, pineapple, mango, papaya and coffee. While the production of non-traditional exports is being studied, the production of traditional exports, like sugar, coconut, and abaca is being streamlined to make them more competitive in the international market.

In line with the country's import substitution program to help save precious foreign exchange, the Ministry of Agriculture has continued to intensify the development of traditionally-imported commodities which the country can produce locally.

To add substance to our government's Food and Nutrition Plan, the Agriculture Ministry is presently carrying out an expansion of its internal capabilities. It has taken measures to solidify its role as the disseminator of agricultural technology to the Filipino Farmer under the World Bank-financed National Extension Project. With its newly-acquired capability to improve its extension service, the country will, in the next year two years, have the best trained and best equipped agricultural extension force to be found in any developing country.

In essence, the agricultural efforts of the year that was, were designed to build on the gains of the previous years and carry on the task of improving the socio-economic and well-being of our farmers.


ARTURO R. TANCO, Jr.
Minister of Agriculture

The Ministry of Agriculture:

CHAPTER I Objectives, Directions and Programs

Conceived as the primary body to oversee the country's agricultural activities, the Ministry of Agriculture's objective from the very start has always been that of accelerating agricultural development through increased and increasing productivity and farm incomes. It has sought not only increase in food production, but also expansion of exports and of import substitution.

Philippine agriculture during the last decade has undergone intensive development; and through all those years, it has contributed enormous benefits and significant improvements in the socio-economic conditions in the countryside. What has powered the progress of agriculture in the past decade is the rationalization of agricultural production, giving to the rice farmer cheap, non-collateralized credit; a guaranteed supply of fertilizer at controlled prices; a well-trained extension force; crop insurance; and, very importantly, a guaranteed support price for his produce, particularly rice. As a result, the country's rice production has been a phenomenal success. The same thing is being done for corn. The supervised credit program has been integrated to include livestock fattening and vegetable production projects and the like.

In striving harder to maintain the production gains during the past years and ensure the continued upgrading of the well-being and incomes of our farmers through a series of creative strategies designed to increase rural incomes and improve nutrition, the Ministry has launched the Food and Nutrition Plan as the framework for its thrusts and programs for the 1980s to stimulate the growth of economy, keep consumers prices at reasonable levels and preventive malnutrition and correct serious nutritional deficiencies among our people through intervention schemes.

In Calendar Year 1982, the Ministry of Agriculture in its effort to attain its goals in support of national priorities, undertook the following programs and projects:

I. GRAINS/CEREALS PROGRAM

Rice — With the main season harvest almost completed, the expected palay output for Calendar Year 1982 is estimated at 166.7 million cavans of 50 kilograms. This is 5.4 per cent larger than last year's crop of 158.2 million cavans and more than 9 per cent bigger than two years ago.

The boost in production was achieved largely through increases in yield per hectare. This year's average yield is expected to reach 49.7 cavans per hectare or 7.3 per cent up from last year's level. Area harvested (3.35 million hectares) remained relatively unchanged compared to last year, with only a slight reduction of about 68,000 hectares.

As of end-June 1982, the country's inventory stood at 1.5 million tons of rice equivalent to about 107 days' supply. This was more than enough to cover a 90-day buffer stock requirement, leaving a modest amount for export.

Corn — Corn production for Calendar Year 1982 is expected to reach about 68.1 million cavans of 50 kilograms each, up by 3.3 per cent over the previous year's production of 65.9 million cavans.

The total area harvested is estimated at 3.4 million hectares, representing a 2.7 per cent increase over last year's hectarage. Data over the past three years show an upward trend in corn hectarage, with the largest expansions recorded in Southern and Central Mindanao, followed by Central Visayas and Southern Tagalog.

Maisagana — The country has been self-sufficient in white corn for human consumption for some time, but has met with limited success in the production of enough yellow corn for animal feed. While there has been an increase in yellow corn production by about 5 per cent annually for the past several years, this increase has not been enough to keep up with the rapid 11 per cent growth per year of the animal feed requirements of the swine and poultry industries. To cut down

on costly importations and to bring the country to self-reliance in corn for animal feed, the Ministry of Agriculture launched the Maisagana program late last year. There are now the downy mildew-resistant seed varieties — and the technology for their effective use — which can increase the yields of the average Filipino corn farmer by three times. Incomes, likewise, can increase 10-fold from the meager P140 per hectare of previous years to P1,500 to P2,500 per hectare. Backed by a proven package of technology, the availability of certified high-yielding seed varieties and hybrids, adequate credit, a well-trained extension force, and full-marketing support, Maisagana aims at self-sufficiency in corn and surplus production for export thereafter.

Feed Ingredient Substitutes — Even as the Ministry of Agriculture pursues corn production through the Maisagana program, it is also looking for other indigenous and cheap sources of protein for animal feed. In this regard, the Ministry is developing the production and use of cassava chips as substitute for yellow corn in commercial feed mixtures. Cassava, which has long been used by backyard raisers as a feed ingredient, can substitute up to 15 per cent of the protein content of commercial mixed feeds. This substitution allows feedmillers to produce mixed feeds at lower cost for poultry and livestock raisers.

Another feed substitute being explored is banana meal, which is derived from chopped and dried banana rejects. Preliminary results from feeding trials conducted by the Ministry of Agriculture and U.P. Los Banos (UPLB) and funded by Philippine Council for Agriculture and Resources Research Development (PCARRD) show that the banana meal can substitute for corn as a source of carbohydrates in feed mixture.

II. LIVESTOCK AND POULTRY DEVELOPMENT PROGRAM

The country continues to be self-sufficient in pork and poultry. However, the country is still dependent on import for at least 98 per cent of its dairy requirements and 30 per cent of its beef needs.

Bakahang Barangay — The Ministry of Agriculture has continued to push the Bakahang Barangay program which provides farmers with credit for backyard cattle fattening. The program now covers 68 provinces with a total of P528,959 million in loans to 134,160 farmer-borrowers. The pro-

gram has financed 242,500 head of cattle, which is equivalent to about 24,260 metric tons of beef valued at P279 million.

To support the program, the Ministry has set up supervised livestock-auction markets where marketing technicians are assigned to provide technical supervision on livestock marketing. There are now 71 auction markets which have sold 269,316 head of various species.

Kambingang Barangay — It is a complementary program for the Bakahang Barangay (and also a thrust of the KKK) aimed at self-sufficiency in goat meat (chevon). Launched in December 1979, the program has dispersed a total of 17,400 goats in 62 provinces with a total of P3.9 million loaned to participants.

Dairy — Another area in which our government has begun moving toward self-reliance is milk to provide nutrition, particularly for the very young.

Under the dairy law passed by the Batasan, the Philippine Dairy Corporation has been organized and is now pursuing two major thrusts: 1) to upgrade native cattle through artificial insemination and dispersal of crossbred dairy animals to smallholder farmers; and 2) to support small dairy farmers with technology and financing in strategic areas where feed resources for milk production are available in steady supplies.

A European Economic Community dairy mission recently completed its study of Philippine dairy possibilities and is recommending to the EEC a \$40-million grant to the Philippines to aid our dairy development program. The proposed grant will be given over five years in the form of skim milk powder and butter oil.

The aim of the dairy program is to produce 20 per cent of our milk requirements in 10 years and thereby reduce our heavy dependence on imports.

III. FISHERIES DEVELOPMENT PROGRAM

Rice-Fish Culture — The rice-fish culture program, locally known as "Palay-Isdaan" was launched as a pilot project in May 1979, covering 41 selected provinces in 12 regions of the country. It is simply the simultaneous growing of fish (*tilapia nilotica*) and rice in the same paddy. This method maximizes output of rice farms and at the same time increases farmer's income at relatively little cost in terms of additional inputs and labor. Fish is ready for harvest at the same time his palay

ripens; hence, the rice farmer has two sources of income in a cropping season. Furthermore, since fish is a cheap source of protein, such production of fish is a big step toward bridging the nutrition gap in the hinterlands.

As of November 1982, results show that 1,762 farmers were supervised in 487 barangays covering 41 provinces. From the total area of 1208 hectares, 637 hectares were harvested with a yield of 68,350.1 cavans of rice and 150 kilograms of fish per hectare.

IV. NATIONAL MULTIPLE CROPPING PROGRAM

The National Multiple Cropping Program, which is implementing the cropping systems approach to achieve increased production is now focusing on the adoption of the farming approach. The program includes not only crop production but also animal production. Its aim is to assist the farmer-clientele in the efficient utilization of his resources to maximize his profits. The program covers pilot areas in Pampanga, Davao del Sur, and Iloilo with an overall target planting area of 212,910 hectares. As of December 1982, 209,596 hectares or 98 per cent of the target had already been planted to, and total area harvested was 150,980 hectares with a total production of 543,707 metric tons. There were 163,937 farmers supervised under the program, 5.7 per cent or 9,404 farmers of which availed of the credit and 154,533 farmers were supervised without credit.

V. OTHER FOOD CROPS

Gulayan sa Kalusugan (Vegetables, legumes, rootcrops) Program — was launched in 1975 by virtue of LOI 248 as an integral component of the government's drive for food self-sufficiency and to provide farmers with additional sources of income, as well as to provide continuous supply of vegetable in the market. As of year's end, the GSK program produced a total of 377,065 metric tons of vegetables from 42,475 hectares planted in the 22 programmed provinces all over the country.

VI. COMMERCIAL (PLANTATION) CROPS DEVELOPMENT PROGRAM

Under its commercial crops program, the Ministry of Agriculture continues to develop non-traditional export crops (bananas, pineapple, fresh mangoes, papaya and coffee) while assisting the ailing traditional export crop sector, particularly

the coconut industry, which has been suffering from an extremely depressed market over the past three years or so. At the same time, the Ministry of Agriculture continues to pursue programs to replace imports of commodities which can be produced locally (cotton, cacao, and rubber).

Non-traditional exports

The country's non-traditional exports are bananas, pineapple, papaya, fresh mangoes and coffee.

Bananas — An estimated 74 million cartons of bananas was exported in 1982. This represents a 7.2 per cent increase over last year's exports of 69 million cartons. Through the efforts of the Ministry of Agriculture, the Japanese tariff on imported bananas was lowered from 40 per cent to 35 per cent for the months of October to March and 35 per cent to 25 per cent during the months of April to September. It is expected that the reduction in tariffs will result in increased banana exports to Japan. The government, however, will continue to negotiate for a further lowering of the banana tariff to put these on a par with the tariff on other fresh fruits such as lemons, oranges and grapefruit.

Japan still remains to be the major importer of bananas, absorbing 80 per cent of total exports, with 20 per cent of exports going to the Middle East.

Pineapples — As of September 1982, fresh pineapple exports brought in \$37.6 million in foreign exchange as compared to \$45 million in 1981. The



country's major market for fresh pineapple is Japan.

Total pineapple exports, however, include juices, concentrates and syrups. Total year-end exports is expected to remain the same as the 1981 level.

Mangoes — Next to bananas and pineapples, fresh mangoes make up the balance of our country's regular fresh exports. Total fresh mango export has gone to Hongkong where quality standards are not as rigid as those of the Japanese market.

Papayas — After bananas, pineapples and mangoes, papayas have the best potential for export among Philippine fruits. At present, however, the country is unable to export fresh papayas to Japan because the Japanese government has not approved the fumigation system to be applied on Philippine-grown papayas. Ironically, this fumigation system is essentially the same system as the one used for mango export which Japan has already approved.

In November 1982, the Ministry of Agriculture submitted to the Japanese Ministry of Agriculture a revised technical paper on fumigation trials conducted by the Bureau of Plant Industry. While the approval of the proposed fumigation system for papayas is under negotiation, a number of Davao growers have been holding back on their development plans. They are, however, ready to implement these plans and be in a position to export within 10 months.

Coffee — Coffee growing in the Philippines is essentially a smallholder industry. According to the Bureau of Agricultural Economics, the area planted in 1981 totalled 107,090 hectares with 89.4 million trees, 75 per cent of which are bearing. Coffee production for 1982 is estimated at 70,000 metric tons or 7 per cent more than the 1981 production 65,000 metric tons. Coffee exports represent one third of total production.

At the International Coffee Council Meeting held in September 1982, the Philippines obtained a further increase in export quota from 24,000 metric tons in coffee year October 1981/September 1982 to 470,000 bags or 28,200 metric tons in coffee year 1982/83.

Traditional Exports

Coconut — To extend assistance to the coconut industry and the millions of coconut farmers affected by the low world price and shrinking

world demand for copra and coconut oil, the President has released P100 million to the University of the Philippines at Los Baños and the Bureau of Plant Industry for the intercropping program under coconut tress. The program, which the Ministry of Agriculture launched in December this year, is especially designed to help farmers earn more through intercropping or "multi-storey cropping" — by cultivating or raising citronella, coffee, ginger, papaya, pineapple, ipil-ipil, goats and hogs, etc., under coconut trees. Fifty million pesos of the funds is for the purchase of seedlings and the half for research.

Sugar — In an effort to help stave off the continued plunge in the world sugar prices due to rising protectionist barriers, the Philippines has joined nine other sugar-exporting countries in filing joint action within GATT against the EEC's sugar export subsidies. So far, however, consultations undertaken by the "Group of Ten" countries with the EEC have ended in failure to reach a compromise. The Ministry of Agriculture, in coordination with other interested sugar-exporting countries, particularly Australia, will continue to prevail upon the EEC to reduce, if not completely eliminate, its sugar subsidy and dumping policy.

Abaca — In 1982, exports of raw abaca fibers decreased by 8.3 per cent registering only 227,679 bales compared to 248,198 bales recorded in 1981. Likewise, demand for other fibers importing countries reduced by 24.5 per cent.

Total fiber exports from January to October 1982 were equivalent to 238,311 bales compared to 262,279 bales produced during the same period in 1981. Of the total fiber exports, abaca fiber constitutes 95.5 per cent while fibers other than those of abaca shared 4.5 per cent.

Import Substitution

To help save precious foreign exchange, the Ministry of Agriculture continued to intensify the development of traditionally imported commodities which the country can produce locally.

Cotton — The country continued to expand its cotton hectareage under the cotton program jointly administered by the Ministry of Agriculture and the Philippine Cotton Corporation. Meanwhile, research continues to develop better varieties and to improve yields through the cotton research programs of the Mariano Marcos University and the Central Luzon State University. The aim of the

program is to produce enough of the fiber to meet the requirements of our textile mills.

Cacao — For the year 1982, area planted to cacao is estimated at about 5,000 hectares, an increase of about 2.9 per cent over the 1981 hectareage. Production for 1982 is estimated at about 4,600 metric tons, indicating an 11 per cent increase over the 1981 production of 4,120 metric tons.

The Philippines continues to be a net importer of cacao, importing about 50 per cent of its domestic needs. In 1982, total imports are estimated to be 5,550 metric tons.

Rubber — The area planted to rubber has been growing consistently during the last ten years. In 1981, total area planted to rubber was estimated at 54,000 hectares, at an average yield of 1.27 metric tons per hectare. Total production for the year was estimated at 69,500 metric tons. Although natural rubber production remains small, it has tripled in the last decade from 21,700 metric tons in 1972 to its present level.

In the early 70s, 38 per cent of the country's domestic supply had to be imported. In 1981, however, the Philippines' rubber imports were reduced to 3,400 metric tons or merely 4 per cent of the total domestic consumption. The Philippine government is now ready to negotiate a loan from the World Bank to finance a national rubber development project, which aims to increase production and improve the quality of rubber for export. The project will increase benefits for some 4,400 farmers, about two-thirds of which are small-holders. The project will be the first World Bank-financed agricultural project devoted exclusively to Mindanao. Total project cost is US\$58 million, \$34.6 million of which will be financed by the World Bank, with the balance to come from contributions of participating agencies and farmer beneficiaries.

VII. COOPERATIVES

In cooperatives, the Ministry of Agriculture will continue to assist Samahang Nayons (SNs) to develop them into stronger, more self-reliant and viable organizations for the growth and stability of our rural communities.

The participation of the Samahang Nayons in the rice procurement program has been facilitated with the fielding of 500 trained field technicians to major grain-producing municipalities. This has the twin-effect of earning for the Samahang Nayons an assemblage fee paid by the National

Food Authority and extending the reach of the NFA's procurement teams.

SNs are aiming for 25.3 per cent this year vis-a-vis NFA's procurement target of 15 per cent of the total estimated production of the country.

Other enterprising SNs have formed Cooperative Rural Banks (CRBs). The CRBs have been infused with fresh capital amounting to as much as P1 million per CRB.

Samahang Nayons Participation in KKK — The SNs, with over a million farmer-members, are participants in the government's livelihood program or Kilusang Kabuhayan at Kaunlaran (KKK). The Samahang Nayan Action Program-KKK Program or the SNAP-KKK has been launched with over 6,000 SNs identified as beneficiaries. A total of P63 million has been allotted for this project.

VIII. FOOD AND NUTRITION PROGRAM

For the 1980s, the task at hand is not only to produce more food to meet the needs of the burgeoning population, but to produce and distribute more of the right kind of food and ensure that it reaches those who are malnourished. The agricultural development strategy for the 80s, therefore, focuses on programs to increase incomes and improve nutrition among the poorest segments of the population. This strategy is contained in the Food and Nutrition Plan (FNP) launched by President Marcos in 1981.

The FNP calls for, among other things, the adoption of special food discount programs to reach those who are too poor to buy the nourishment they need because they are outside the normal market mechanisms. These are the marginal upland farmers, the subsistence fishermen, the landless laborers, the disadvantaged industrial workers in urban slums — and their families.

To determine the feasibility of such food discount schemes, a special food discount pilot project will soon be implemented to provide rice and coconut oil at subsidized prices to several pilot municipalities.

Nutrition surveys have established that contrary to popular belief, the major nutritional deficiency among the poorer segments of our population is not the lack of protein, but the lack of calories. Since rice and coconut oil are high energy sources and are commodities the country has in abundance, the food discount program envisioned under the FNP will utilize these commodities to tackle the calorie deficiencies of special target groups.

Accomplishments of the Ministry of Agriculture

CHAPTER II Calendar Year 1982

REGION I (ILOCOS REGION)

Region I's concerted efforts in implementing its integrated development program for the year 1982 registered significant strides notably in rice, corn, livestock, legumes, vegetables and fruits. Despite the price increase of commercial inputs and the early cut-off date of irrigation water, the region's self-sufficiency in rice recorded a total production of 795,015 metric tons tilled by 325,924 farmers from 360,870 hectares.

In corn production, a total of 51,410 metric tons of white and yellow corn was attained from 61,850 hectares. An increase of 9,620 metric tons from last year's production was attributed to the region's inclusion in the MaiSagana program. Steadily gaining support among corn farmers, MaiSagana covered the provinces of Abra, Ilocos Norte and Pangasinan for Phase A; while Ilocos Sur was included under Phase B in addition to the previous ones. Some 6,045 farmers were involved in the program. A total loan of P1,966,160 was approved under MaiSagana and about P1,546,368 or 79 per cent has already been released for this purpose.

The region has continuously given priority to the promotion of livestock development. A total production of 8,312 metric tons of meat was realized from 20,801 head of cattle, 134,620 head of swine, 15,748 goats and 329,609 birds slaughtered. At year's end, 500,788 animals consisting of cattle, pigs, goats and poultry under the barangay-based supervised credit program were financed by banking institutions like the Central Bank, Development Bank of the Philippines, and the rural banks amounting to no less than P125,225,000. Supportive to the backyard poultry and livestock production are the maintenance of breeding stations and centers, forage and pasture development, and artificial insemination services.

The Ministry of Agriculture in Region I maintains 17 breeding stations and centers. During the year in review, 790 breeders were produced and a total of 1,672 head of animals was dispersed. The development of forage and pasture for feeds to meet the increasing livestock population was given utmost attention whereby 18 hectares of pasture lands were developed and 967.50 kilograms of seeds were produced, 715.80 kilograms of which were distributed to farmer-cooperators. Artificial insemination services on 446 cattle, 46 carabaos and 13,749 swine were performed by livestock technicians. Results of this undertaking accounted for 218 offsprings for cattle and 43,374 for swine.

Under the Gulayan sa Kalusugan (GSK) program, a total of 125,808 metric tons of assorted vegetables was realized from 15,029 hectares out of 21,633 hectares. There are still 6,604 hectares to be harvested with an expected production of 55,275 metric tons as of this writing.

Although a slight decline in rootcrops production was recorded this year due to the decrease in area planted, the region was able to attain a total production of 132,372.6 metric tons from 11,167 hectares cultivated by 44,185 farmers. In vegetable production (leafy, fruit and root vegetables), a total of 173,677 metric tons was realized from 23,021 hectares planted by 67,494 farmers. Fruit production, being a priority project for domestic consumption and export, received further boost with 1,767 hectares planted to assorted fruit trees with a notable production of 22,012 metric tons involving 47,069 farmers. Some 20,866 hectares planted to various kinds of leguminous crops by 52,826 farmers also turned out a remarkable output of more or less 28,000 metric tons.

On the other hand, the production of cash crops and non-food crops like coffee, onion, garlic, ginger and ipil-ipil trees has been a source of additional income to farmers in the region. For instance, 1,130 farmers in Benguet and Mt. Province

produced 473 metric tons of coffee from 67 hectares; 5,498 farmers in Pangasinan, Ilocos Norte and Ilocos Sur produced 11,495 metric tons of onions from 2,693 hectares; garlic production was 36,239 metric tons obtained from 12,982 hectares cultivated by 26,362 farmers; ginger production obtained 403 metric tons from 39 hectares planted by 401 farmers; while ipil-ipil production for agro-energy or dendro-thermal and animal feeds purposes reached a total 997 metric tons produced by 330 farmers from 138 hectares.

In seed production, farms and stations registered a total production of 47,479 cavans of palay from 542.53 hectares and 21,581 cavans were classified as registered and certified seeds. This year's production surplus added to the 1981 balance stocks was utilized to supply seed requirements of 198,219 Masagana 99 farmer/cooperators. Production of certified corn seeds attained an actual mark of 218 cavans for the IPB variety (native), while mungo seeds of CES-ID-21 (Pag-asa No. 1) variety attained eight cavans.

In plant material production, a total of 455,013 pieces of sexually and asexually assorted propagated fruit trees was produced. Some 322,163 seedlings were distributed either sold or given free valued at P674,730.

With the establishment of the Surveillance and Early Warning System (SEWS), plant pests and diseases were reduced to the minimum. About 141,557 hectares consisting of ricelands, orchards and other croplands planted to 185,633 bearing and non-bearing trees were surveyed and protected under the pest management and surveillance program.

Massive information campaign was mounted on nutrition education, homeyard food production, prevention of malnutrition and rehabilitation of malnourished children. There were 29,850 infants served and given supplementary feedings and 420 rural improvement children centers established which catered to 15,717 pre-schoolers.

Income-generating industries were given impetus. Some 28,904 families were involved in projects which turned out a total production of 414,626 pieces of assorted handicrafts. Leadership skills and improved farming practices were disseminated to rural out-of-school youths through Anak Bukid (AB) classes. Some 379 AB clubs having a total membership of no less than 10,000 engaged in small-scale livestock production activities, such as cattle fattening, goat raising, piggery

and poultry, were able to produce 815 metric tons of meat from 740 head of cattle, 890 swine, 815 goats, and 16,000 poultry. Food crops produced by AB members amounted to 462 metric tons consisting of mungo, peanut, assorted vegetables and rootcrops from a loan of P198,090.

In support of the national government's endeavor to elevate the standard of living in the rural areas the Ministry of Agriculture in Region I, under the directives of the President, acted as the lead agency in rendering technical assistance to farmers under the Kilusang Kabuhayan at Kaunlaran (KKK). To date, five project management seminars have already been conducted to train technicians and farmer/clientele to undertake and manage livelihood ventures such as cattle fattening, poultry, swine and food crop production projects in small-scale. Farmers engaged in livelihood programs were provided with technical assistance by extension workers in managing projects of their choice. Loans were made available by financing institutions to KKK borrowers through the recommendation of MA technicians as a result of feasibility studies on viable KKK projects. Majority of KKK-assisted undertakings were agricultural projects.

The development of soil services focused on inventory, classification, conservation and development of soil resources in the region was relentlessly pursued. There were 13,093 soil samples analyzed under fertilizer and plant analysis, support to the integrated area development and support to food production, agrarian reform and agro-energy development; 32,255.45 hectares were surveyed and classified for land capability; and 31,749.25 hectares under suitability studies were made. There were 22 water impounding sites identified for construction purposes, and one site located at Suba, Paoay, Ilocos Norte was completed during the year. These water impounding projects will provide for 1,607.5 hectares of watershed, 90.12 hectares of pond area and 1,077 hectares as service area.

In cooperatives development, 18 primary cooperatives were registered during the year in review, making a cumulative total of 176 cooperatives in operation. There were 9 secondary cooperatives listed through the region with one area marketing cooperative (AMC) added to the fold, while 7 more cooperatives are in the process of registration. Samahang Nayan (SN) registered a total of 2,170 organized with a notable membership of 99,488. Twenty-four SNs were registered for the

same year, making a cumulative total of 1,987 SNs registered with 92,926 *bona fide* membership. Some 153 SNs were reorganized and strengthened to category 1 level identified under the SNAP-KKK projects.

As of December 31, 1982, SN funds collected were as follows: P960,307.05 General Fund; P1,793,092.72 for Barangay Guarantee Fund; and P1,743,133.72 for Barangay Savings Fund.

REGION II (CAGAYAN VALLEY)

With the overall agricultural development scheme of the MA as the framework, Region II in 1982 was able to accomplish the following:

Rice production chalked up 838,235 metric tons in both Masagana 99 and rice-sustaining areas with a total hectareage of 360,870. In both programmed and unprogrammed areas, 98,608 farmers were served. This production figure is much higher than last year's by 100,455 metric tons or an increase of 6.6 per cent.

In corn production, a total of 252,405 metric tons was registered both under the Maisagana program, and the unprogrammed areas, involving 59,463 farmers. The low yields for both the financed and unfinanced farms under the Maisagana program were attributed to drought which unexpectedly occurred after planting.

The region also engaged in the development of rice-fish culture project. By year's end, 118 farmers involved in this dual purpose endeavor harvested 86.7 metric tons of palay and 3 tons of fish from 27 hectares.

In the promotion of livestock and poultry activities centered on Bakahang Barangay (BB) animal dispersal, artificial breeding, disease control, quarantine and inspection. At year's end, 15 rural banks participated in the BB program. Some 2,030 head of cattle were fattened by 1,234 small beef producers/borrowers. To accelerate the promotion of the cattle industry in the region, 18,370 raisers were assisted. Likewise, the livestock dispersal program accounted for 1,630 head of swine, cattle, carabaos and goats dispersed including 429 offsprings produced and redispersed. Artificial insemination services on 3,174 animals by technicians registered 74 per cent accomplishment from a target of 4,290 head of animals due to limited supply of purebred boars and bulls. On disease control, quarantine and inspection, 726,000 head of various animals were treated and vaccinated. While strict quarantine measures were instituted on 70 vessels and 49,342 head of economic farm animals were examined for inter-provincial shipment, a total of 441,124 poultry and livestock was slaughtered.

Vegetable, fruit and rootcrop production in Region II were mostly under the category of backyard. For CY 1982, 195 hectares were planted to assorted vegetables with a total production of 507 metric tons. About 1,496 farmers were served and assisted. Fruit production also reached 96 tons from 42.6 hectares tilled by 546 farmers; while rootcrop production was 861 metric tons with 1,017 farmers served and assisted.



Being one of the country's leading foodgrain producers especially in peanut, mungo and other leguminous crops, the region registered a combined total of 10,300 metric tons. Cagayan, Quirino and Isabela were the top producers. Some 11,037 farmers participated in this program.

Under the nutrition program, poultry and livestock raising and vegetable gardening were vigorously pursued. There were 76,435 farm families and 7,179 youth served under the home economics extension. The Rural Improvement Club Children Centers covering 518 barangays catered to 20,924 infants, 3,659 of which were prevented from malnutrition before they reached 18 months old. Anak Bukid Clubs numbering 300 with a total membership of 7,179 out-of-school youth (OSY) were able to raise 315 cattle for fattening; harvest 240,344 kilograms of mungo and peanut from 323.3 hectares; raise 677 head of goat and 1,070 swine; and dispose 19,217 broilers. Other crops and projects like the Green Revolution and KPMS (kadios, papaya, malunggay and seguidillas) accounted for 729,585 kilograms of various vegetables. Around 125 OSYs also availed of the rural bank loans worth P45,000 which were fully paid before year's end. With the newly-launched Asian Farm Youth Exchange (AFYE) program with Japan for 1983, a youth leader from Isabela was selected as the lone national delegate to Japan for a 7-month training in rice production.

In seed and plant materials production, the region's experiment stations, seed farms and seed producers farms produced 234,366 kilograms of rice and corn seeds from approximately 244 hectares planted. From this area, 196,706 kilograms were distributed. A total of 104,355 cavans of palay was sampled and analyzed and thereafter classified as foundation, registered, certified and/or rejected seeds. Plant material production registered a total of 224,338 pieces of sexually and asexually propagated fruit trees as against a target of 146,700.

In crop protection, pest management activities were carried out jointly by field technicians, farmer organizations, and out-of school youth groups. Along this line, 166,152 hectares were surveyed for insect pests and rodents and 93,472 hectares for weed. Some 170,836 farmers were served.

Soil conservation and development services were vigorously pursued. Of the 11 programs/projects activities under soil services, nine were

completed. The soil base map production target of 3,900 hectares was overshoot by 44,926 hectares or a 1,151.95% accomplishment. On soil conservation and management, 2,355 hectares were placed under erosion control.

To substitute one-half of the inorganic nitrogen fertilizer requirements of irrigated ricelands with organic material source of nitrogen, the National Azolla Action Program (NAAP) activities in the region initially identified and classified lowland rice areas for possible azolla utilization in the provinces of Cagayan and Isabela on pilot basis. For this purpose, a regional propagation center for the production of azolla planting materials was established.

Likewise, to increase crop production in rainfed areas where KABSAKA method using supplemental irrigation system can be adopted, seven sites located in the provinces of Nueva Vizcaya and Cagayan were surveyed for water-impounding purposes.

Cooperatives development was relentlessly pursued. Organized and registered were 7 producers cooperatives, 4 marketing cooperatives, 8 credit cooperatives, and 1 service cooperative. Five SNs in Cagayan, 4 in Isabela and 1 in Quirino were also added to the list of existing registered SNs. Some 18 cooperatives (coops) were examined or audited and 12 pre-cooperatives were converted into full-fledged status. With the SN-NFA Grains Procurement Tie-Up program in operation, 300 SNs were involved and given incentive fees for palay delivered/assembled by SN farmer members. The Cagayan Valley Development Cooperative, Inc. (CAVADECO) feedmill complex (6 tons/hour capacity, slaughterhouse and tractor pool) was inaugurated in October, 1982, and is now operational.

In support to the national livelihood program is the region's KKK Coordinative Services, which assisted in the feasibility study preparations and evaluation of 4,764 proto-type agro-livestock projects and indorsing the same to financing institutions for funding in the total amount of P71,890,581. Proto-type projects under the livestock category include broiler, draft carabaos, swine raising, poultry and vermiculture. Projects on crops include peanut, garlic, coffee, citrus, legume, vegetable and fruit productions. One-half of these prototype projects is now operational, and a total of 12,213 beneficiaries was served.

REGION III (CENTRAL LUZON)

For a population of about 5 million, rice production in Region III both under Masagana 99 and rice extension attained more than the level of self-sufficiency in 1982. The region's rice production in both programmed and unprogrammed areas registered 1,599,865 metric tons – over and above the regional requirement – and with a piled-up surplus of 3,524,500 sacks of palay. There were 248,600 farmers assisted by MA technicians, covering an area of 485,340 hectares.

Known as the least corn producer in the entire archipelago, this number one rice-producing region typifies how a revitalized corn production program dubbed as the "MaiSagana" could encourage farmers all over the region to plant corn on a larger scale. Encouraged by the production yield registered by two corn farmers from Tarlac and Bulacan at 100 cavans of corn per hectare, quite a number of farmers are now engaged in corn production. Over-all, corn production in Region III for the year 1982 amounted to 6,390 metric tons, or an increase of 27.7 per cent over last year's production of 5,005 metric tons.

Rice-fish culture was encouraged in the region. A pilot project of 20 hectares put up in Bataan and Nueva Ecija registered a production of 82.5 metric tons and 3.8 metric tons of rice and fish, respectively.

As part of the region's livestock and poultry development program, a significant increase in production was attributed to intensified livestock and poultry dispersal program, the KKK, and artificial breeding services, which supported the Bakahang Barangay Program and, at the same, to measures instituted for the prevention of pests and diseases, maintenance of animal health and cost effective feeding program. Of the major economic animals in the region, the following statistics at year's end are 103,114 head of cattle, 4,699 of which were slaughtered; 288,827 carabaos, 15,533 of which were butchered; 1,031,124 swine, 520,789 of which were slaughtered; 139,261 goats, 26,530 were slaughtered; and 1,180,464 chickens and ducks. Total meat production for the year in review amounted to 58,434 metric tons. In artificial breeding, 12,000 animals were inseminated during the year. Its 24 semen banks have been in continuous operation by providing semen and swine being the semen center

for the region. Animals dispersed totaled 1,180. Vaccination of large and small animals against various animal and fowl diseases registered no less than 31,700,407, while animal death cases attended to numbered 547,993. In animal feed control, 2,296 feed samples were collected and analyzed and 46 feed mills were registered and licensed. Likewise, in forage and pasture development, its regional farms were able to improve and develop 28 hectares planted to legumes, grasses and ipil-ipil trees. These farms serve as sources of planting materials for distribution to clientele/cooperators.

Three dairy farms are being managed to beef up the government's nutrition program. These dairy farms were able to produce, collect and process a total of 402,960 liters during the year in review, benefitting 30,200 children and other recipients.

The legume and rootcrop production programs produced a corresponding output of 23,567 metric tons from 10,696 hectares, and 46,761 metric tons from 12,492 hectares, respectively. Onion and garlic production registered 41,772 metric tons harvested from 5,605 hectares with Nueva Ecija and Tarlac as topnotch producers. The town of Bongabon in Nueva Ecija is now exporting onions to Japan.

In vegetable and fruit production under the Gulayan sa Kalusugan (GSK), a total of 33,568 hectares was planted to assorted vegetables with an overall production of 214,164 metric tons. The region also takes pride in producing sweet melons and watermelons, majority coming from the ricefields of Bulacan and Tarlac where 5,215 hectares were cultivated and produced 31,512 metric tons (m.t.).

The region also engaged in the development of plantation crops like coconut, sugarcane, coffee, cotton, tobacco, banana, mango and such other potential crops as guayabano, jackfruit, papaya, cashew and citrus. Total hectarage planted to these crops were 72,656 with a total output of 413,494 metric tons, to wit: sugarcane – 283,636 m.t.; mango – 84,926 m.t.; banana – 29,343 m.t.; coconut – 7,636 m.t.; tobacco – 879 m.t.; coffee – 451 m.t.; cotton – 184 m.t.; and others (papaya, jackfruit, cashew, citrus and guayabano) – 6,862 m.t.

Under the cooperatives development, the re-

gion's thrusts were focused in the organization/registration, revitalization, supervision and auditing of Samahang Nayons, Kilusang Bayans, and Credit Cooperatives. At year's end, 1,985 SNs were organized and registered with membership reaching 125,144; 1,513 SNs were revitalized with a total membership of 92,059. There were 16 Kilusang Bayan Cooperatives organized/registered and 100 KBCs revitalized with a total asset of P68,061,801.13. On the other hand, there were 55 credit cooperatives registered with a capitalization of P34,774,568.83. Because of the increase in membership, it fostered the social and economic growth of small farmers in the region.

Nutrition education for pre-school children, pregnant and lactating mothers was vigorously pursued. Some 81,559 families and 46,238 infants and pre-schoolers benefited from various malnutrition prevention projects. On the other hand, there were 576 Rural Improvement Club Children Centers (RICC) established in the region which catered to the needs of malnourished children. These centers were put up through the assistance of the University of the Philippines and UNICEF. Aside from the basic concepts of nutrition, womenfolk were also encouraged to raise crops, poultry and swine in their backyard. Some 76,139 families produced 1,052 metric tons of assorted vegetables and fruits and 526.4 metric tons of livestock and poultry. Anak Bukid members and farmers were also encouraged to raise cattle for fattening, goats, poultry and swine. On this regard, 3,107 large animals, 38,957 poultry and 17.48 metric tons of eggs were produced, benefitting 2,619 families. Income-generating projects like clothing, handicrafts and foodcrafts produced 19,705 pieces, 18,606 pieces and 8,212 pieces, respectively. Some 3,576 families were served by 189 home management technologists (HMTs).

Production of seeds and planting materials was similarly intensified. Seed production registered 10,583 metric tons, while planting materials 668,537 pieces, 449,090 of which were distributed. Seed growers associations which helped accelerate the distribution to farmers likewise produced 201 metric tons.

As part of the region's crop protection activities, a significant reduction in various pest infestations was attributed to the effective implementation of the Surveillance and Early Warning System (SEWS). On this aspect, 542,978

hectares were covered. Also under the RP-German crop protection, 509,410 hectares were surveyed.

In the matter of soil survey and land classification, 4439 hectares were surveyed and classified; 43 soil-based maps were produced; 670 hectares were surveyed for water-impounding projects; and 8,280 hectares were placed under soil and erosion control. In support to the food production, agrarian, and agro-energy development, some 5,184 samples were analyzed. Other related activities dealt on soil fertility, which conducted investigation and verification trials for rice, corn and other crops on farmers' field of activities in support to the Unified Rice Applied Research and Training Information Program (URARTIP) and PAG-ASA projects.

REGION IV (SOUTHERN TAGALOG AND METRO MANILA)

Region IV, composed of six mainland provinces and five island provinces, as well as nine prominent cities including Metro Manila within its scope of coverage, is called the premier region because of its dense population besides being one of the country's nerve and hub centers of industrial, commercial and agricultural business activities. Despite its gradual urbanization where some agricultural lands are being converted into industrial and housing development purposes, Region IV was able to produce 740,720 metric tons of rice both in the programmed and unprogrammed areas. Farmers assisted reached 264,461, covering a total land area of 383,010 hectares.

In corn production, a total of 246,725 metric tons was produced from 271,280 hectares. Under the MaiSagana program, 1,001 hectares were planted to hybrid and IPB varieties which were given loan components amounting to P1,416,960 in the provinces of Palawan, Oriental and Occidental Mindoro and Batangas. Partial production averaged 2.18 metric tons for hybrid and 1.27 metric tons for IPB varieties, from 597.5 hectares harvested.

The livestock services of the region initiated a number of innovations for the improvement of the small cattle industry. Foremost among them was the adoption of hormonal heat synchronization of beef cattle, a system that allows controlled or scheduled artificial breeding program, insemination of the maximum number of animals within a

limited time frame, and optimum use of skilled manpower. As in previous years, backyard poultry and livestock production were encouraged to supply the protein needs of rural families as well as to augment their farm income. Results of the undertaking accounted for 1,616,654 poultry, 751,091 swine, and 291,627,943 kgs. of eggs. During the year in review, the Bakahang Barangay was also given more impetus. On this regard, a total of P34,353,965 was farmed out by 23 accredited rural banks to 5,562 cooperators for the procurement of 8,772 head of feederstocks, which eventually produced an estimated incremental weight of 947 metric tons.

In animal dispersal program, 1,429 head of large animals were dispersed and 14,059 various animals were artificially inseminated. There was no alarming outbreak of livestock and poultry diseases, as sporadic cases were immediately contained. Frequent reprogramming of immunization regimen was made due to inadequate supply of vaccines. Nevertheless, an aggregate of 2,682,499 immunizations against common but highly infectious diseases was conducted on different economic animals, to wit: Cattle - 99,234; carabao - 72,771; swine - 265,725; sheep/goat - 6,322; horse - 1,415; poultry - 2,230,714; and pets - 6,317.

In forage and pasture development, the regional farms, stations and centers were able to improve and develop 92.3 hectares planted to grasses and legumes. Around 5,850 seedlings were produced for distribution to private cooperators and interested parties.

Vegetable production in this region both under the programmed and unfinanced areas of the Gulayan sa Kalusugan (GSK) registered a total hectareage of 20,768.16 under cultivation with a combined output of 200,876.44 metric tons. Prominently involved in this undertaking were the provinces of Batangas, Laguna, Rizal and Cavite. Hand in hand with the GSK was the backyard vegetable production involving no less than 18,780 farm families, rural youth organizations and others. Total production from this effort amounted to 36,685 metric tons. Rootcrop production likewise tallied 12,705 metric tons from 4,071 hectares tilled by 12,816 farmers. On the other hand, legumes and fruit production registered 1,298 and 140,273 metric tons, respectively, from 34,327 hectares. Some 111,273 farmers were

assisted and benefited from these ventures.

Along seed production, the region's experiment stations and seed farms devoted 81 hectares to assorted crops accounting for 55,413 kilograms, 46,764 kilograms of which were distributed to farming clientele. A total of 1,011 hectares was also planted to foundation and registered seeds, producing 53,634 cavans of certified seeds. Some 45,722 cavans of certified seeds were used by the Masagana farmers. In plant material production, a total of 338,743 pieces of sexually and asexually propagated plants was produced. Total plant materials distributed during the year in review was 1,243,558 pieces.

As part of the region's crop protection activities, a significant reduction in various plant pests and diseases was attributed to early crop protection measures and effective implementation of the SEWS. A total of 445,574 hectares was covered.

As part of the region's plant quarantine activities, BPI Administrative Order No. D-2, series of 1982 was issued, declaring Palawan groups of islands under quarantine due to Black Rice Bug outbreak covering no less than 10,240 hectares. Plant materials/product carried in and out by potential vessels arriving/leaving at the ports of Batangas, Siain in Quezon, San Jose in Occidental Mindoro, and Puerto Princesa were subjected to thorough inspection. There were 242 inspections and boardings made by MA regional personnel during the year in review.

Among the special projects accomplished by the region under the Palawan Integrated Development Project were:

1. Acquisition of a 500-hectare lot site for provincial agricultural and livestock resource centers; 2) identification and selection of sites for construction of rural agricultural centers; 3) completion of topographic and soil surveys of said lot including survey of coco-based farmers for multi-storey cropping system; and procurement of equipment and negotiation for the purchases of heifers and bulls.

Accomplishments under the 2nd Laguna de Bay Irrigation Project (vegetable component) were: 1) construction of a training center and dormitory building at Barangay Paradahan, Tanza, Cavite; 2) and establishment of demonstration farms for verification purposes of 45 different varieties of

vegetables and a two-hectare seed production area for tomato, eggplant and squash.

Under the multi-storey cropping project, four demonstration farms were established in the provinces of Quezon, Laguna, Batangas and Cavite, 20 hectares of which were planted to assorted vegetables, corn, mongo, sweet potato, cacao and pineapple. Some 235,000 hectares were subjected to soil and land resource survey.

In cooperatives development, activities were centered on the organization and registration of Samahang Nayons. For CY 1982, the region had a total of 2,317 organized SNs with 96,557 members and a total of 1,966 registered SNs with 87,794 members. These SNs had a total capital build-up of P7,595,520.39 at year's end. There were six operational Area Marketing Cooperatives (AMC) with 431 SN/KB members with a capital build-up of P603,352 while some are operating within the region and within the Metro Manila area. Some 613 SNs were also involved in the KKK program and were able to accumulate savings in the amount of P5,712,342.46.

In the matter of soil survey and classification, 16,809 hectares were surveyed and classified; 101,429 hectares were surveyed under the land suitability studies; 14,590 hectares were surveyed for the production of soil base maps; 3,184 hectares placed under erosion control; and 71 investigations and verification trials undertaken in support to both NFAC, URARTIP and PAGASA projects.

Nutrition education was given emphasis to Rural Improvement Club (RIC) members thru homemakers classes and rural improvement club children centers. Income-generating projects and selected backyard food production supported the activities under the nutrition program. During the period in review, 693 Anak Bukid Clubs with 13,821 members were organized and simultaneously engaged themselves in crop and livestock production. Results from these projects netted 1,464.4 metric tons of meat; 568,393 metric tons of legumes; 342,792 metric tons of rootcrops and 338 metric tons of vegetables.

REGION V (BICOL REGION)

The year 1982 saw this region launch expanded programs on the production of crops and animal proteins, concentrate its efforts in cooperatives

development research, as well as in the conduct of income-generating projects and the Kilusang Kabuhayan at Kaunlaran (KKK) to the full - its entire field technicians and extension workers drafted into the mainstream of the region KKK technical delivery system. Despite devastating typhoons that occurred during the year, Region V's self-sufficiency in rice and other commodities was maintained. For instance, rice production both under the Masagana 99 and rice-sustaining areas registered a total output of 625,790 metric tons. Some 226,536 farmers were assisted by field technicians covering a total hectarage of 301,750.

In corn and feedgrains production, MaiSagana (Phase A) and Maisan 77 registered 14,028 metric tons from 12,898 hectares. Total corn production including those under the extension program was 99,855 metric tons. Some 14,490 farmers were served.

In the promotion and development of livestock, poultry and dairy, accomplishments were made, among others, in the areas of animal dispersal, forage and pasture development, artificial insemination, animal feed control and diagnostic services and milk production to supply the animal protein needs of the region and other regions as well. Some 21,545 poultry raisers produced 280,129 chickens, registering no less than 206 metric tons of poultry meat; 15,891 swine raisers produced 52,394 head of swine; and 13,984 livestock farmers raised 15,720 head of large animals, which registered at roughly 1,665 metric tons of meat, while egg production recorded an output of 440,906 kilograms. This year's backyard production reached no less than 4,546 metric tons. Under the Baka-hang Barangay Program, 374 livestock raisers availed of the Barangay Financing loan from 9 Rural Banks in the amount of P3,195,132 with which to finance 1,477 cattle for fattening purposes.

The dairy farms in Sorsogon and Albay processed a combined volume of 102,541 liters of fresh cow's milk, 49,944 liters of which were produced from its dairy farms and 52,597 liters were collection/purchases from dairy cooperators. Out of this volume, 13,685 liters of pasteurized milk valued at P33,633 were sold to the public and 47,759 liters of toned milk were distributed to 18 feeding projects, benefiting an average of 1,370 children per month.

Livestock auction markets in Uson, Masbate, and Labo, Camarines Norte, have continued to funnel the maximum profits to livestock farmers. At year's end, 6,348 large animals were registered, 5,257 of which were sold.

To upgrade and improve the genetic capacity of livestock in the region, 2,114 animals of various specie were dispersed. In artificial insemination, 598 cattle and 8,561 swine were inseminated; and its 8 cattle breeding stations and one stock farm produced 270 head of livestock of superior genetic quality. Vaccination of large animals against hoof and mouth disease (HMD) and hemorrhagic septi-cemia (HEMSEP) totalled 181,599, swine against HMD, hog cholera and swine plague — 158,852; poultry against fowl cholera, avian pests, roup and fowl pox — 521,304; and dogs against rabies — 2,856. It also diagnosed 692,336 animals and treated 134,851 for various diseases. Animal feed control services registered 736 feed samples collected and analyzed. Quarantine inspection services likewise were rendered to 42 foreign and inter-island vessels and 155,786 head of economic farm animals were examined for intra-and-inter-provin-cial shipment.

As a component of livestock development, the region directed its efforts towards the develop-ment of forage and pastures. As livestock raisers/cooperators grew bigger, 3,546 hectares of pasture

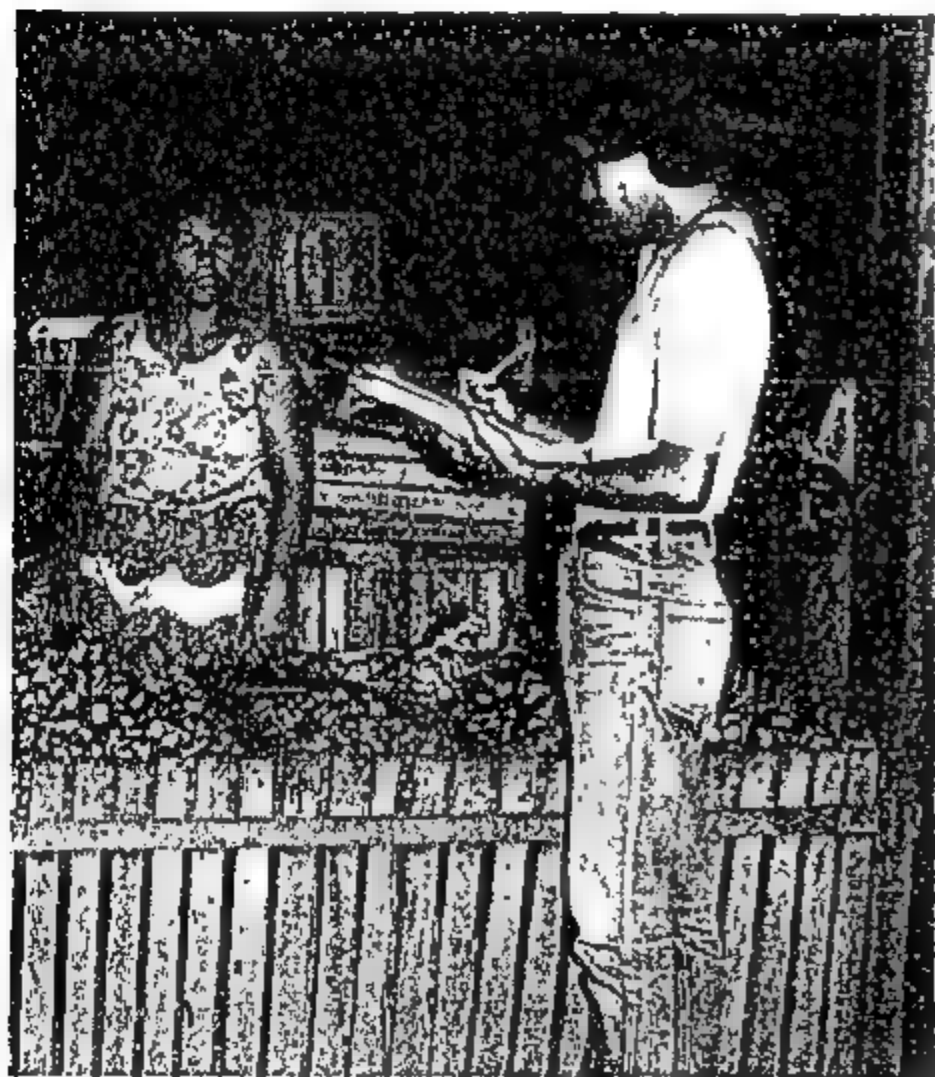
areas and the region's livestock stations/farms/centers were developed. Likewise, 240 hectares were developed and planted to legumes and pasture grasses, producing and distributing 23,699 kilo-grams of legume seeds and 57,369 seedlings to farmers/cooperators.

Along rice-fish culture, 35 farmers engaged in this project with an initial hectareage of 16.4 planted to rice and stocked mostly with tilapia. From this area, 1,170.38 cavans of palay and 4,678 kikograms of fish were produced. On-going field test on azolla-rice-fish culture is now in pro-gress to determine the effect of azolla on the size and weight of tilapia nilotica.

In vegetable production, a total of 1,997 hec-tares under the Gulayan sa Kalusugan Program (GSK) was planted to assorted vegetables by 2,329 farmers and produced 9,880 metric tons. The number of vegetable raisers under the non-financed program slightly decreased from 57,000 to 36,000, thereby affecting its production for this year with an output of 4,408 metric tons compared to last year's 6,509 metric tons. Average yield per hec-tare, however, increased from 2.04 metric tons to 2.42 metric tons. Overall production for both the programmed and unprogrammed areas reached 14,288 metric tons from 3,819 hectares.

Rootcrop production in the region reached only 29,388 metric tons since areas devoted to root-crops decreased to 6,828 hectares as against last year's 14,000 hectares. However, average yield per hectare increased from last year's 3.31 metric tons to 4.3 metric tons this year. Likewise, legume pro-duction rose to 1,766 metric tons due to the substantial increase in hectareage planted. On the other hand, fruit production registered a total of 10,863 metric tons. In its entirety, these programs recorded a total of 34,017 farmers assisted and served by the MA field technicians.

Production of quality seeds in the region conti-nued to be a joint undertaking of seed growers/cooperators, stations and seed farms. In 1982, 131 seed growers produced 1,775.67 metric tons of assorted seeds while the region's station and seed farms produced 162.71 metric tons. Total seed distribution amounted to 1,095.35 metric tons, including those produced by seed growers/coope-rators and the region's production of 61.34 metric tons. Plant material production totalled 387,877 of sexually and asexually propagated plants, 243,603



of which were distributed. "Hanga" was likewise intensively produced and at year's end totalled 158,895 pieces. Some of the marcotted "hanga" were distributed to the six provinces of the Bicol Region, as well as to other parts of the country.

Plant pests and diseases were reduced due to intensive monitoring. Along this line, an area of 35,671 hectares was covered and surveyed for insect pests, rodents and plant diseases. Some 45,525 farmers were served. Moreover, the RP-German crop protection project also covered 16,974 hectares. Established and operated were 87 observation stations on pest situation, 2 agro-met stations and 3 light trap stations.

There were 53 researches conducted at the Bicol Experiment Station (BEST) and at the Albay Experiment Station (AES). These were crop performance tests on rice, corn, legumes, and vegetables; while the AES conducted its tests on plantation crops such as pili, citrus and pepper. Other researches were conducted along pest management and generation of improved agricultural practices, which would significantly reduce production cost and still ensure high yield, as well as minimize environmental pollution.

Supportive to the food production, agrarian reform and agro-energy development is the region's soil extension services. At year's end, 6,203 soil samples were analyzed as basis for fertilizer recommendations. Soil survey classification activities covered a total of 23,152.74 hectares, aside from soils and land resources capability surveys - a joint undertaking of the MA BRDP-SOILS-BUCA-CSSAC - which already covered 28,200 hectares for the Partido-Caramoan area and the Legaspi-Tiwi area. A special team of the Water Impounding Project finished 6 feasibility studies covering an area of 1,127.5 hectares. A total of 6,036 hectares was placed under soil conservation and erosion control. Other activities dealt on soil fertility, which conducted investigations and verification trials and demonstrations in support to NFAC programs, foremost of which were the 292 azolla trials and demonstrations conducted in nursery ponds.

In cooperatives development, activities centered on the organization and registration of Samahang Nayons (SNs). For Calendar Year 1981, there were 1,454 SNs for fishermen organized with a total membership of 68,475. Of these, 78.75 per cent or

1,145 SNs were registered with a total of 57,743 members. Also reorganized were 127 SNs for fishermen with 4,624 members, 83 SNs of which were registered. Other activities included financial and management audit of 37 SN/KB; organization of area marketing cooperatives in Bulan, Sorsogon; registration and re-registration of books of accounts of 10 coops and SNs; supervision of 410 SN/KB; updating of statistical records of 120 SNs; and conducting technical trainings on cooperative development. As of year's end, fund collections are as follows:

Barangay Savings Fund — P2,346,359.21

Barangay Guarantee Fund — P1,753,777.23

Campaigns on nutrition education, homeyard food production prevention of malnutrition and rehabilitation of malnourished children were intensified. Two major projects in nutrition education were undertaken by home management technologists, namely, the Malnutrition Prevention Project (MPP) and the Rural Improvement Club Children Center (RICCC). Under the MPP, 510 outreach barangays and 15,758 infants were served. With 677 RIC centers and 385 INSUMIX centers, 10,782 infants were fed and 26,831 mothers were extended services. Selective food production was also given impetus. Backyard projects such as vegetable gardening, livestock and poultry raising registered a total of 2,100 metric tons.

The Rural Youth Development Program reaffirmed its commitment to the rural youth. During the year, 8,694 rural youth were served who in turn produced 823.04 metric tons of assorted foodstuff.

Other highlights of the year were the fund raising activity for Anak Bukid (AB) projects thru the Bagong Himig Countryside Concert from May 20-25 in Naga City and Camarines Norte; the 4th World IFYE Conference on October 30 to November 6, attended by 25 AB members and members of the AB Advisory Council; the sending of 3 AB trainees to California under the Philippine Agriculture Training Program (PATP) and International Farm Youth Exchange (IFYE) programs; the winning of the most outstanding AB award by an AB member from Sorsogon; and the extending of the NFAC loaning scheme to out-of-school youth in two Bicol provinces thru the Kabataang Sakahan para sa Kaunlaran (KASAKA) program.

REGION VI (WESTERN VISAYAS)

Considered as one of the major rice-producing regions in the country today, rice production in Western Visayas for CY 1982 totalled 1,153,745 metric tons in both Masagana 99 and rice-sustaining areas. Total area covered was 497,370 hectares tilled by 302,716 farmers.

A 5-ton package of technology known as "MaiSagana" program was recently launched in the region this year. Initial accomplishment of the corn program for 1982 covered a total hectarage of 5,556 hectares involving 3,247 farmers. In both the MaiSagana programmed and unprogrammed areas, total corn production registered 46,985 metric tons from a total of 73,900 hectares. Some 69,238 farmers were served.

In the promotion and development of livestock and poultry, emphasis was laid on the supervised credit program for livestock, particularly the Baka-hang Barangay and the Kambingang Barangay. On this regard, a total of P4,622,818 was released to 1,120 cattle and goat raisers by accredited rural banks in the region. Livestock dispersal was given impetus especially in depressed areas where stocks were extended to farmers who did not have the needed capital to start a project. Animals dispersed by specie accounted for 713 head of cattle; 57 head of carabaos; 167 swine, and 273 goats. On the other hand, to upgrade the quality of cattle and swine stocks and increase meat production, 7,436 head of cattle and swine were bred artificially and naturally. From this operation, a total of 33,726 offspring was produced. The region has continued to maintain and supervise 18 livestock markets in the provinces of Aklan, Antique, Capiz, Iloilo and Negros Occidental, where market analysts of the Ministry of Agriculture grade the animals and assist the farmers on problems affecting marketing operations.

During the year in review, the region was able to ship to the Greater Manila area and other parts of the country a total of 9,507 head of cattle, 1,703 head of carabaos, 27,983 goats, 154,178 swine, 535,804 chicken and 2,632 head of other animals. Total number of animals slaughtered registered 21,893 for cattle, 16,514 for carabao, 161,167 for swine, 3,608 for goats, 352,767 for poultry and 376 for other animals.

There was no major outbreak of communicable animal diseases during the year in review, except for minor ones which were common among live-stock and poultry. The most prevalent communicable and infectious animal diseases in the region like hemorrhagic septicemia in cattle, hog cholera and swine plague in swine, and fowl cholera and avian pest in the case of poultry, which usually occur during the second and third quarter of the year, were checked to the maximum due to regular vaccination against these animal diseases during the first half of the year. There were 2,205,583 large and small animals vaccinated at year's end.

The region also engaged in rice-fish culture, a successful venture that could attest to the growing awareness and acceptance of modern technology by the farmers in Region VI. Now of regionwide acceptance, the project, involved 272 farmers cooperators. Some 318 hectares were planted to rice-tilapia. From this hectarage, a total of 30,139 cavans of palay and 56,301 kilograms of fish was produced.

The region during the year in review relentlessly pursued the development and expansion of plantation crops for export. Among the crops being bolstered were mango, coffee, cacao and cashew. Major areas suited to mango plantation had expanded, particularly in the sub-province of Guimaras, which covers an area of 4,939 hectares with 7,827 farmers deeply involved. At year's end, total mango production registered 7,389 metric tons.

For coffee, a total of 732 hectares was planted by no less than 3,350 farmers. Total production from this hectarage amounted to 803 metric tons.

Cacao, with 120 hectares and 972 farmers involved, registered a production of 68 metric tons. In the meantime, cashew production is still in its pioneering stage.

Major areas suited for vegetables and rootcrops were also planted to meet local needs as well as for export. Total area planted to vegetables, both programmed and non-programmed, was 9,930 hectares and the production registered during the year was 20,887 metric tons. Rootcrops production, particularly cassava and sweet potato, covered a total area of 7,375 hectares with an overall production of 17,037 metric tons. A total of 24,803 farmers was served.

In legume production, 10,132 metric tons were produced from a hectarage of 7,773. Total farmers served numbered 11,206, 6,142 of which were Anak Bukid (AB) members. The Anak Bukid also contributed a total of 56.1 metric tons from their 110 hectare-legume project.

In cooperatives development, the region's thrusts were focused on the organization/reorganization/reactivation/registration of Samahang Nayons, some of which were dormant for some-time. During the year in review, 15 SNs for fishermen with 456 members were organized and 11 SNs with 329 members were registered. Aside from the 15 SNs and 28 Kilusang Bayans organized, the Area Marketing Cooperatives (AMCs) in the region were also strengthened, which assisted farmer-members in marketing of products.

To spur the economic and social development of SNs of farmers and fishermen, as well as pre-cooperatives, the region conducted a series of trainings and seminars, to wit: Negros Occidental Federation of Coop (OFECO) training on self-help basis; 17 trainings for SNs, KBs and special types; field workers training for Iloilo and Aklan, 3 trainings and seminars for District Cooperatives Officers (DCOs) and Municipal Agricultural Officers (MAOs) on Management, Project Identification and Development Planning for Selected Officers of the 5 AMCs in Western Visayas. The SN Action Program for KKK thru SDLF likewise extended production loans to SNs of the Municipalities of Miranda and Pontevedra in Negros Occidental, and Legas and Buenavista in Guimaras.

At year's end, the members of the SNs organized and their corresponding membership are, as follows:

	SN for Farmers	SN for Fishermen	Total
SN-organized	2,013	55	2,068
membership :	85,031	2,114	87,145
SN-registered	1,769	43	1,812
membership	76,117	1,719	77,836

In support of the various schemes of the nutrition program in the region, learning activities were centered on food and nutrition and income-generating projects, and prevention of malnutrition, as well as rehabilitation of malnourished children. Members of rural improvement and homemakers clubs and rural folks involving 75,660 families

were encouraged to raise vegetables, fruits, poultry and livestock in their backyard. As a result, these projects produced 375,246 kilograms of fruits and vegetables; 2,083,661 kgs. of foodstuff processed; and 97,183 chickens and 21,405 swine. On improved nutrition practices and family management designed to prevent malnutrition among 0.18 month old infants by educating pregnant and lactating mothers, 40,482 infants were assisted and 14,242 families were served. Some 985 insumix centers were also established and organized during the year.

Plant material production was vigorously pursued by the region's nurseries and experiment stations; while seed production was done by seed growers and, in some cases, vegetable seeds and grains were produced by the stations. At year's end, plant material production totalled 1,093,710 pieces of assorted sexually and asexually propagated fruit trees. Some 873,813 pieces were distributed either sold or given free.

Hand in hand with crop production activities were undertakings along crop protection to minimize, if not totally control plant pests and diseases, and weed infestation. Along this line, a total of 405,963 hectares was surveyed for pests and rodents; 167,389 hectares for various plant diseases; and 209,417 hectares for weeds. Likewise, under the RP-Guimaras Crop Protection, 69 observation stations were established throughout the region, covering 10,475 hectares.

Under soil survey and classification, 8,219 hectares were surveyed and classified. Soil and water conservation, a project to determine and foster land capability, registered a total of 8,589 hectares placed under erosion control; while 2,327 hectares were surveyed for water impounding projects.

There were 63 fertility and management trials conducted; 1,543 soil samples analyzed; and 4,377 packets of soil inoculants produced and distributed.

A special project which the region vigorously pursued during the year was the rainfed agricultural project, popularly known as "KABSAKA" or "Kabusogan sa Kaumahan" meaning Bounty in the Farm. Launched last year, this project has already gained foothold in rainfed areas in the province of Iloilo, where before these areas had

only one cropping year. With the introduction of KABSAKA technology, these areas now enjoy having 3 croppings a year.

The KKK program was also launched during the year. As of December 31, 1982, a total of 78 projects was approved for funding with an estimated loan of P21,168,032. All projects were technically supported by the MA.

The later part of 1982 also saw the launching of the Guimaras Countryside Action Project or GCAP which would help and benefit mango growers in Guimaras island. Seven demo farms of one hectare each were put up to serve as a show window on farming system with mango as the base crop; and another seven demo farms where mango farming was integrated with livestock production. Complementing this project is a processing plant with a capacity of 100 kilo-dehydrated mango production per day which was established and inaugurated recently. The marketing component of the project would be handled by the Guimaras Producers Cooperative, Inc., a duly organized agricultural cooperative with 200 active members.

REGION VII (CENTRAL VISAYAS)

In 1982, rice production under Masagana 99 program and other rice-sustaining areas in Region VII registered an overall production of 167,585 metric tons from an area of 130,630 hectares. Some 44,629 farmers were assisted by field technologists.

Corn production both under the MaiSagana and Maisan 77 as well as the unprogrammed areas, recorded a total production of 241,245 metric tons. Around 20,705 farmers were served by field technologists.

Although rice-fish culture in the region did not gain headway among coastal farmers during the year, the project was encouraged to fill the nutritional needs of the families in the hinterlands. For the year 1982, 37 farmers cultivated an area of 8.2 hectares, which registered a total production of 626.2 cavans of palay and 439.8 kilograms of fish.

Along livestock production, significant improvement under the supervised credit program coverage was noted. At year's end, 319 head of cattle were financed for a loan value of P761,300. This brought to a total figure of approximately P2.3 million loaned out since 1979. The year also wit-

nessed the initial implementation of the Bakahang Barangay Palahian Program in the region. The first bank to release this kind of loan was the First Carmen Rural Bank (FCRB) at Carmen, Bohol which released the amount of P99,200 to finance 8 breeders and 24 fatteners.

With the current emphasis on chevon production, 60 individuals under the Kambingang Barangay Program were granted a loan of P118,150 for 328 head of goats.

In livestock and poultry dispersal program, a total of 604 head of cattle was dispersed, 411 of which were new dispersals, and 193 were redispersals. Eight purebreed Cambodian carabaos, 173 head of swine, 148 goats, 20 ducks, and 160 chickens were likewise dispersed, which brought to an overall total of 1,113 animals and poultry dispersed during the year. Livestock production from stock farms, breeding stations/centers produced 54 carabaos, 107 cattle, 4 horses, 122 goats, 54 swines, 4,447 chickens, 14 turkeys, 140 ducks and 374 quails. These animals and poultry were dispersed as sources of breeding stock in barangays, ANICARE projects, BLISS projects and other institutions to improve the bloodline and upgrade the quality of native stock in the region.

As regards artificial insemination, 243,755 c.c. boar semen and 8,285 c.c. bull semen were collected/processed which were used to inseminate 6,535 sows/gilts, 2 caracows and 879 cows/heifers. From this undertaking, 30,695 offsprings of swine and 249 of calves were produced.

In forage and pasture development, its regional farms, breeding stations and centers were able to improve and develop 30 hectares planted to legumes and improved grasses. At year's end, the region was able to produce 133.1 kilograms of seeds and 373,290 seedlings. Farmer-cooperators also developed 12 hectares of grasses, 42.2 of legumes and grasses mixture, and 29 hectares of pure legumes. These improved pasture areas were the principal sources of planting materials for distribution to interested and deserving farmers.

The region experienced no serious animal diseases outbreak during the year, except for sporadic and minor cases of hog cholera, swine plague, fowl cholera, avian pests and hemorrhagic septicemia, which were given immediate treatment and

placed under control. Animals vaccinated and/or treated for various diseases totalled 103,790 against HMD; 75,968 against hem-sep; 62,221 against swine plague; 102,017 against hog cholera; and 959,306 fowls for various diseases in chicken. These vaccinations did not include vaccinations done in commercial and semi-commercial farms supervised by the Ministry of Agriculture. On the other hand, there were 4,861 animals vaccinated against rabies.

Sporadic cases of animal diseases in the region were easily controlled because animal specimens were thoroughly examined. For this year, 1,362 animal specimens were examined. Bacterins produced were 382,200 c.c. and vaccines distributed reached 1,082,883 vials.

Vegetable production in Central Visayas is practically on a backyard basis, except in few places like Canlaon City and Mantalogan, Davao, Cebu, where vegetables are raised in large scale. For the year 1982, a total of 19,553.4 metric tons was produced from an area of 3,034.9 hectares. Some 18,573 farmers were served and assisted in this endeavor.

In rootcrop production where cassava, sweet potato, ubi and gabi are extensively raised in the region, a cumulative total of 7,143.42 hectares was harvested with a total production of 42,520.5 metric tons as of December 31, 1982.

The provinces of Bohol, Cebu, Negros Oriental and Siquijor are leading in legume production, with 1,672.72 hectares planted to peanut and mungo. From this hectarage, an overall production of 2,675.45 metric tons was produced and 7,730 farmers were assisted.

Fruit production in Region VII was also pursued. However, fruit trees are mostly grown in farmers' backyard. On this aspect, fruit production reached a total production of 12,519.3 metric tons.

In the field of cooperatives development, the region's activities were centered on the promotion, organization and registration of Samahang Nayons (SNs), cooperatives, as well as area marketing cooperatives. Seminars on SNAP (Samahang Nayan Action Program) — KKK were also conducted for SN officers and implementors in support of the KKK program. To date, Region VII has a cumulative total of 158 registered/re-registered coopera-

tives, to wit: Bohol — 26; Cebu — 81; Negros Oriental — 41; and Siquijor — 10. As of year's end, 1,335 SNs were registered with a total membership of 66,022. One of the remarkable achievements of this region in the field of cooperatives development, aside from bagging four major national awards for outstanding accomplishment in the promotion of cooperatives, was the final registration and operation of the second Area Marketing Cooperative in the province of Bohol.

Nutrition education for pre-school children, pregnant and lactating mothers, prevention of malnutrition and rehabilitation of malnourished children homeyard food production and income-generating projects, thru rural improvement clubs, etc., were vigorously pursued. Some 16,995 pre-school children and 19,402 infants and 52,879 families benefited from various malnutrition prevention projects. There were 557 insumix centers established. Aside from the basic concepts of nutrition, rural womenfolks and rural youths were also encouraged to raise vegetables, poultry and swine in their backyards. Some 10,570 families, which were assisted and served by field technicians, turned an output of 14,670 head swine and 65,577 chickens. Likewise, rural youth clubs engaged in income-generating projects registered a total production of 15,546 head of assorted animals. The region likewise garnered the second prize award for the best recipe in the 1982 National Kakanin Cookfest held in Diliman, Quezon City, sponsored by the Rural Improvement Club of the Philippines.

Production and distribution of seeds and planting materials were similarly intensified. Seeds and plant materials were selected and propagated primarily on their export potentials, consumers' preferences and nutritive values. Seed processing was undertaken by both experiment stations at Mandawe and Bohol where quality seeds and planting materials are being produced. To supplement production of the much-needed planting materials, municipal nurseries were also utilized in propagating assorted kinds of ornamental plants with economic and aesthetic value. For the year 1982, 285.05 metric tons of assorted seeds and 199,718 pieces of sexually and asexually propagated plant materials were produced. Distributed were 368.75 metric tons of seeds and 148,556 pieces of plant materials.

As part of the region's crop protection activities, a significant reduction in various pest infestation was attributed to the effective implementation of the Surveillance and Early Warning System (SEWs), which was launched in pilot areas under the RP-German Crop Protection Program and implemented in the entire region in 1979. Along this line, 11 ecological units and 51 observation stations were established with an area coverage of 9,190 hectares; while plant pest control technicians covered 60,527 hectares for possible crop infestations. As regards commodity and plant quarantine, activities centered in two major ports of entry — ports of Cebu and Dumaguete. Plant quarantine operations in the Port of Cebu included those of Cebu City, Mactan International Airport, Cebu City Post Office, subports of Toledo City, Asturias, Davao City and Mandawe City. The port of Dumaguete served the quarantine needs of Dumaguete City proper and its subports; while the ports of Tagbilaran centered on domestic quarantine activities. These ports were assigned the tasks of preventing the entry of exotic plant pests, exportation of infested/infected plants to foreign countries and local destinations, and standardization of agricultural commodities for export. As of December 31, 1982, a total of 179,922,385 kilograms of plants and plant products was inspected for import and 4,685,126 kilograms for export by the unit with a total collection of P46,652.02.

The region's soil survey and classification activities covered 5,504.8 hectares surveyed and classified for various development projects; 470 hectares were surveyed for the production of soil-based maps; 2,619 hectares were placed under soil erosion control; and 33 fertilizer utilization trials conducted. Other activities dealt on soil fertility, which conducted investigations and verification trials for rice, corn and other crops on farmers' field of activities in support of the NFAC projects and URARTIP/PAGASA projects, as well as agrarian reform and agro-energy development projects.

Insofar as agro-livestock is concerned, all-out support by the MA in Region VII was also extended to the KKK. At year's end, approved agro-livestock projects amounted to P7,714,527, distributed among the provinces of Bohol, Cebu, Negros Oriental and Siquijor with 1,466 beneficiaries.

REGION VIII (EASTERN VISAYAS)

In Region VIII, rice production in both Masagana 99 and other rice-sustaining areas registered a total production of 319,535 metric tons from an area of 181,140 hectares. Compared to last year's output, this year's production was a bit lower on account of the low performance of the three Samar provinces, which could be attributed to the negative attitude of the farmers towards the adoption of the modern package of technology and the prevailing peace and order situation. Number of farmers served and assisted by field technologists registered a total 74,771.

As regards loan releases to and repayments by the farmers, a total of P100,541,851.70 was released by the Philippine National Bank and rural banks to finance Phases 1-19 under the Masagana 99 rice program; while a total amount repaid to both banks totalled P82,271,987.65 with a repayment rate of 81.82 per cent.

In corn production, a total of 11,101 corn farmers both under the Masagana program and extension areas cultivating 204,020 hectares produced a total yield of 219,135 metric tons.

Along livestock and poultry production, activities centered on artificial insemination, animal dispersal, forage and pasture development, animal feed control, vaccination of large and small animals, and dairy development. In artificial insemination, there were 111 cattle, 10 carabaos, and 5,758 swine artificially inseminated, which produced offsprings of 22 young cattle, 1 carabao, and 21,408 piglets. The number of artificial insemination services extended to its clientele decreased due to the closure of four breeding centers as most of the breeder stock used for artificial insemination activities had reached culling stage.

Insofar as animal dispersal is concerned, there were 1,526 head of cattle, 154 head of carabaos, 405 goats and 454 swine distributed to deserving farmers. On the other hand, forage and pasture development registered a total of 212 hectares planted to legumes, grasses and ipil-ipil trees. Some 1,389 kilograms of seeds and 16,811 ipil-ipil seedlings were produced, 426 kilograms and 15,072 seedlings of which were distributed, respectively. This year's seed production and distribution

bution were a bit lower than last year's on account of depressions that occurred and hit the region during the year. In animal feed control, 312 feed samples were collected and analyzed and 118 feed establishments were registered/assisted. Vaccination of large and small animals totalled 82,300 and 113,675 for poultry.

As regards dairy developments, total milk production this year produced from the three dairy farms — Malitbog, Sta. Elena and Gandara — amounted to only 5,887.5 liters, compared to last year's production of 9,855 liters. The Malitbog dairy goat farm with 17 does on the milking line decreased by almost half of last year's production due to the temporary suspension of milking activities for almost five months because of deflucking and deworming activities and also because milking suffered severe stress during typhoons. The Sta. Elena dairy farm likewise experienced the most drastic decrease in milk output — 1,917.5 liters — which was just about $\frac{1}{4}$ of its total production from last year's 6,914 liters. The Gandara dairy farm, on the other hand, increased its milk output by 1,230 liters from last year's 850 liters. These three dairy farms were able to serve a daily average of 155 children.

One of the Ministry of Agriculture's thrusts in Region VIII which is vigorously undertaken the rice-fish culture to augment farmers' income and improve nutritional diet. For Calendar Year 1982, 290 cooperators were involved in an aggregate area of 233.28 hectares, which turned out a total production of 1,071.67 metric tons of rice and 10.38 metric tons of fish.

Vegetable production was given impetus by encouraging farm families to raise them in their backyards and idle lands. Through this scheme, rural families provided their homes and markets a steady supply of fresh vegetables and augmented their family income. A total of 686 hectares was tilled by 1,557 farmers, accounting for 1,445 metric tons of assorted vegetables.

Increase in the production of rootcrops, especially cassava and sweet potato, was recorded due to the substantial increase in area planted from 17,457 hectares in 1981 to 18,252 hectares this year. Rootcrop production for CY 1982 registered 84,143 metric tons compared to last year's output of 55,800 metric tons. Increase in rootcrop production was attributed to the wider area

planted to high-yielding varieties and the adoption of improved technology. Production of legumes, such as mungo and peanuts, rose from 2,454 metric tons in 1981 to 3,594 metric tons this year with 5,627 farmers served from a hectareage of 2,895. Increase in legume production was also attributed to the use of HYVs and the adoption of modern technology.

Coffee and cacao production in Region VIII is in its sporadic and disorganized stage, but based on this year's performance, these commodities have great promise and could be one of the region's top money earners on a plantation scale. In terms of targets set for the region in 1982, out of the 63 hectares targeted for coffee, 42.2 hectares were accomplished with a production of 49.84 metric tons and 102 farmers served. Cacao, on the other hand, had 99 hectares targeted, 86 hectares of which were accomplished with a production of 130.44 metric tons.

In cooperatives development, activities during the year in review were concentrated in the promotion, organization and registration of Samahang Nayons (SNs) and Kilusang Bayans (KBs); revitalization of SNs; and technical assistance to SNs and KBs. Promotional activities involved series of meetings, campaign for membership and capital build-up, and trainings or pre-membership education program seminars. As of December 31, 1982, the region was able to organize 26 SNs with a total membership of 527 and registered 79 SNs with a total membership of 349. There were 20 KBs organized and 8 were registered. Along with this, 421 SNs were revitalized with membership reaching 11,668; and 480 SNs and 58 KBs with a total membership of 39,025 were given technical assistance in the form of attendance during board and committee meetings, threshing out internal problems, which included investigations of cases involving SN and KB members, conduct of financial and management audit, examination and installation of books of accounts of cooperatives to further strengthen their operation.

In support of the nutrition thrust of the Ministry of Agriculture, the region undertook intensive campaign on nutrition education, activities of which centered on supplementary feeding among infants and pre-schoolers, prevention of malnutrition and rehabilitation of malnourished children, homeyard food production; and income-generating

projects. Training sessions and meetings were conducted for homemakers and rural improvement clubs with an attendance of no less than 122,680 womenfolk. Families were also encouraged to raise vegetables, poultry and livestock in their backyard. As a result of the extensive campaign on the mass planting of vegetables, such as kadyos, papaya, malunggay and seguidillas (KPMS), a total of 3,975.83 metric tons of vegetables and fruits from an area of 124.06 hectares was produced by members of the homemakers and rural improvement clubs. Some 109,803 chickens and 13,517 of swine were raised with a total meat production of 135,544 kilograms of chicken and 575,707 kilograms of swine. Income-generating projects like handicrafts and clothing, involving 56,585 womenfolk, reported a production of 304,045 pieces of rattan and nito thermos trays, ladies bags, waste baskets, abaca bags, step-ins and slippers, and 282,583 articles comprising children's dresses, renovated ladies and men's garments.

Anak Bukid members numbering 1,712 scattered in the different provinces of the region raised 429 head of swine, 1,881 goats, 9,624 chickens, and 114 head of fattened cattle/carabaos with a total meat production of 133,303 kilograms.

Under soil survey and land classification, an aggregate of 5,292.66 hectares was surveyed and classified. Aside from its regular annual workgoals, 2,484.4 hectares, 8,928.7 hectares, and 28,981.24 hectares were surveyed in Biliran, Southern Leyte, and Samar provinces, respectively. This outstanding accomplishment was made upon the special request from municipal mayors of these provinces to survey their municipalities for soil adaptability of crops and other land uses for municipal development plans besides being a joint project of the Ministry of Agriculture and the Eastern Visayas Farming System Development Project (EVFSDP). A total of 15,055 hectares was surveyed for the production of soil-based maps. Because of azolla propagation and the EVFSDP, aside from the above mentioned accomplishment, more soil-based maps were produced, covering an additional area of 68,757 hectares distributed among the four provinces of the region, namely, Leyte, Biliran, Samar and Northern Samar. A total of 5,640.49 hectares was placed under erosion control and 1,329.5 hectares under farm irrigation and drainage control benefitting 1,350 families. There were 60 fertility and management trials conducted,

7,324 soil samples analyzed, and 7 soil fertility maps updated. Other activities dealt on investigations and verification trials for rice, corn and other crops in support to the NFAC and URARTIP/PAGASA projects.

In vegetable and legume seed production, 1,724 kilograms of vegetable seeds and 7,187 kilograms of legume seeds were produced from the Romualdez experiment station, Abuyog experiment station, Gandara seed farm and Salcedo seed farm. A slight decrease in seed production this year was registered compared to last year's 2,844 kilograms for vegetable seeds and 5,658 kilograms for legumes seeds, mainly because some areas shifted to other crops. Some 223,221 of sexually and asexually propagated planting materials of various crops were produced. Production of asexual planting materials particularly of petroleum tree (hanga) was of utmost priority during the year in review.

Along crop protection, main activities were geared at preventing and controlling plant pest and disease occurrences. General plant pests and diseases were controlled covering 58,038.3 hectares. To prevent the spread of major pests and diseases, plant quarantine was strictly imposed.

Special projects being implemented, among others, during the year in review were the Pagkain ng Bayan and the Kilusang Kabuhayan at Kaunlaran (KKK). The Pagkain ng Bayan projects scattered in the different provinces of the region, which utilize idle and virgin lands, have contributed significantly to the rice production in the area. This project not only serves as a show window for improved technology and site for research on the adaptability of technology but also as a ready source of rice seeds.

As regards the KKK, this movement has gone far and wide towards the realization of a common man's dream -- a decent livelihood -- that can provide a modest income for the sustenance of his family's needs. The MA, as the lead agency for agro-livestock development, has contributed immensely in the implementation and orderly operations of the various projects. Of 145 on-going projects for both crops and livestock, a total funding support of P12,670,058.63 was generated from various lending institutions throughout the region.

REGION IX (WESTERN MINDANAO)

As in previous years, rice production continues

to receive priority in the total development efforts of the region. In terms of rice production, its 1982 output registered a total of 350,296 metric tons in both the programmed and unprogrammed areas from an area of 144,020 hectares. On this aspect, some 69,266 farmers were served.

In corn production, 88,875 farmers under the MaiSagana and extension areas cultivating 232,560 hectares produced a total of 186,985 metric tons. Admittedly, there was a low output under the MaiSagana program attributed to the long drought from January to April 1982, and the heavy corn infestation in the province of Zamboanga del Norte in August and September of the same year.

Region IX is deficient in animal protein especially in poultry and poultry products, beef and dairy products as most of its dressed chicken and assorted meat come from Cebu and Bohol. To suit the meat requirements of the region's increasing population, the MA strengthened various livestock-related projects, particularly in the provinces of Zamboanga del Norte and Zamboanga del Sur. Activities and accomplishments were made in areas of animal dispersal, forage and pasture development, artificial breeding, animal feed control, and veterinary quarantine and inspection.

In animal dispersal, 108 head of cattle, 78 carabaos, 195 swine, 103 goats, 195 ducks and 106 chickens were distributed. Results of animal dispersal accounted for 2,089 offsprings. There were 1,737 animals inseminated during the year.

In forage and pasture development, the regional farms, stations and centers were able to improve and develop 68 hectares which were planted to grasses and legumes. Artificial insemination registered 1,737 animals inseminated, results of the undertaking, however, were not available as of this writing. Animal feed control registered 84 feed samples collected/analyzed and 18 feedmills registered/assisted. On quarantine and inspection, 49,268 head of economic animals were examined and 746 vessels were boarded and inspected.

Supportive to the livestock development program are livestock-related projects which were harnessed, namely: 1) the Mahayag Carabao/ Buffalo Breeding Station at Barangay Kaangayan, Mahayag, Zamboanga del Sur. The project is the second carabao research center ever to be established in the country. When fully operational by

mid-1983, it is expected to boost the region's meat supply and at the same time upgrade native carabao thru crossbreeding; 2) the Lamitan (Basilan province) Goat Production Center established in July this year to accelerate goat production in the locality. At year's end, the 82-hectare project had 13 head of Anglo-Nubian Stock and 19 head of native goats. Fifteen hectares were devoted to pasture development; 3) the Bagalupa Stock Farm and Asean Shed Project in Zamboanga del Sur; and 4) the Swine Breeding Centers, as well as the Gatulac Stock Farm, both in Zamboanga del Norte which were expanded.

Rice-fish culture was implemented only in Zamboanga del Sur and carried out jointly by the Ministry of Agriculture/Phil.-Australian Development Agricultural Program (PADAP)/BFAR. Roughly 3.5 hectares were planted to rice and stocked with 35,750 tilapia fingerlings. Both rice and fish production registered 128 cavans and 301.5 kilograms, respectively.

The region also engaged in vegetable production under the Gulayan sa Kalusugan (GSK) project. As of December 31, 1982, no less than 3,110 hectares were planted to assorted vegetables. Total GSK production was recorded at 5,269.3 metric tons with 43,437 farmers served. Backyard vegetable production accounted for 25,485 metric tons with 26,285 farmers served.

Among rootcrops, both on small-scale and large-scale production, cassava remains to be a top priority crop since it is the staple food of the Muslims in the region. This year's total area planted to cassava rose from 7,425.8 hectares in 1981 to 26,752 hectares this year producing 227,392 metric tons. Other rootcrops like sweet potato, gabi, etc. registered a total production of 103,291.8 metric tons with 14,804 farmers served.

In legume production, a total of 1,627 metric tons was produced from 1,207 hectares tilled by 2,225 farmers. Fruit production registered an overall total of 294,252 metric tons from 21,758 hectares, broken down as follows: fruits and nuts 119,238 m.t. from 6,924 hectares; banana — 139,985.5 m.t. from 9,317 hectares; and citrus — 35,028.65 m.t. from 5,517 hectares. Some 11,358 farmers were served and assisted.

Along with other priority thrusts of the Ministry of Agriculture, fruit trees production especially



lanzones, marang, and durian was encouraged. Of 14,644 hectares planted to a variety of fruit trees, production stood at 99,560 metric tons as of year end.

In support of the plantation crops development program of the Ministry, the CAMARCO project in Zamboanga del Norte was expanded including soybean in its priority crops, like cacao, coffee, rubber and mango. A pet project of the provincial government, the CAMARCO, an acronym for cacao, mango, rubber, and coffee, was renamed CAMARCOS during President Marcos' birthday on September 11, 1982. Primarily, the project was designed to help augment the income of farmers by utilizing unproductive areas under coconut plantations. The breakdown of areas (hectares) planted to priority crops follows: cacao — 388.9 hectares; coffee — 297.6 hectares; rubber — 3,369 hectares; and mango — 184.4 hectares.

Under the nutrition program, learning activities centered on malnutrition prevention projects. On this context, there were 1,861 training classes conducted, 31,731 families served and 9,665 in-

fants benefited from this scheme. There were 311 Rural Improvement Clubs organized and RIC membership rose from 6,964 in 1981 to 9,250 this year. Likewise, 14,088 families and out-of-school youths were served under the home management extension service. All these rural organizations as well as Anak Bukid Clubs were engaged in backyard livestock and poultry raising and other income-generating projects like backyard gardening. In livestock and poultry production, Anak Bukid members and farmer/borrowers produced 2,389,745 chickens, 263,606 swine and 310,631 large animals and 5,289,559 eggs; while rural womenfolk engaged in selective homeyard production (vegetable) registered a total production of 836,467 kilograms.

The Surveillance and Early Warning System (SEWS) of the RP-German Protection Projects in the region registered a total of 73,991 hectares covered and surveyed. Crop losses were significantly reduced due to the control of various pest infestation. Along this line, 60,834 hectares were placed under control.

Seed and plant materials production was like-

wise upgraded to maintain the region's crop production performance. At the Ipil experiment station, Zamboanga del Sur, planting materials produced was recorded at 15,103 kilograms, some of which were distributed to interested farmers for backyard gardening. In some parts of the region, farmers were encouraged to get involved in the seed growers' association, thereby boosting the seed requirements in the area.

Plant quarantine in the region was intensified thru a vigilant implementation of quarantine rules and regulations. Stations and centers in the region's ports and seaports of entry were likewise strengthened to facilitate the eradication/identification of plant pests and diseases. Ten ports established regionwide reported frequent inspection at 525,688 at year end.

Soil conservation and development services continued to be one of the region's major activities. Out of 6,305 hectares targeted for soil survey and classification in 1982, 6,890 hectares were surveyed and classified; 2,689 hectares placed under erosion control; 14 fertility and farm trials conducted; 5 soil fertility maps updated; 999 soil based maps produced; and 2,305 soil samples analyzed under the food production, agrarian reform and agro-energy development.

Special projects, among others, pursued by the region during the year in review, are as follows:

1. *Azolla production* — Azolla was identified as an effective alternative to nitrogen fertilizer as evidenced in increased rice production in applied areas. Estimated production from 48 nurseries established throughout the region accounted for 213,721.25 kilograms. A total of 6,321.5 kilograms of NIOMASS was distributed to 2,510 farmers during the year. With the expansion of field experiments and field demonstrations, the use of azolla is expected to increase considerably.

2. *Water Impounding Projects* — To assure a yearround supply of water in untapped areas of the region, the reconnaissance and soil investigation team of technically-trained personnel identified 10 probable water impounding sites (WIS) in the provinces of Zamboanga del Sur, Zamboanga del Norte, and Basilan. Proposals for the construction of water impounding projects were likewise prepared: a) Buenavista, Zamboanga City; b) Batayan, Labason, Zamboanga del Norte; and c) Longmut,

Sumadat, Dumalinao, Lamare in Zamboanga del Sur.

3. *Mushroom culture* — Spearheaded by the region's Soils Laboratory Staff, mushroom culture was initially introduced in the region in September this year. Seven demonstrations were conducted involving the use of *volvarella volvacea* variety. In four months, 200 bottles of spawns were produced with a minimum production of 4 kilos per bed.

4) *KKK Livelihood Program* — Launched in 1981, it was only this year that the nationwide Kilusang Kabuhayan at Kaunlaran program was implemented in full swing with the approval of a number of prototype projects in the region. As of December 31, 1982, 76 agro-livestock projects were approved with P6,176,199.80 released for implementation. When fully operational, it is expected to benefit more or less 2,156 farmers.

REGION X (NORTHERN MINDANAO)

Calendar Year 1982 saw this region increase its rice production output in both Masagana 99 program and unprogrammed areas from 321,225 metric tons in 1981 to 350,585 metric ton this year from an area of 142,920 hectares. Overall corn production registered 213,960 metric tons from a hectarage of 232,560. The MaiSagana corn program, which was implemented this year, contributed to some extent to the region's 19,989 metric tons surplus in 1982 with the planting of 4,501 hectares (3,227.3 for Phase 82-A and 1,274 for Phase 82-B) to IPB in 3,725.3 hectares and hybrid corn, in 776 hectares.

In the promotion of livestock and poultry, accomplishments were made in the areas of animal dispersal, artificial breeding, dairy development, disease control and quarantine.

At year's end, 8 rural banks participated in the Bakahang Barangay program. Some 1,285 head of cattle were dispersed to 320 small beef producers/farmers thru a P1,843,421 Bakahang Barangay loan from rural banks. The region's stock farms and propagation centers during the year were able to ensure a good supply of quality breeding stocks. Of 687 head of animals produced in stock farms and breeding centers, 602 were dispersed to 416 farmers/recipients.

Supportive to the backyard breeding and animal dispersal is the artificial insemination services on 3,390 head of swine and 2,003 head of cattle and carabao. Results of this undertaking accounted for 15,568 offsprings for swine alone. Vaccinations and treatment of large and small animals totalled 237,900. On animal quarantine and inspection, 1,144 head of economic farm animals were examined for intra and inter-provincial shipment.

With the expansion of dairy processing plants, the region has continuously processed fresh milk and has increased its milk output. During the year in review, the dairy processing plants located at Kalingagan, Villanueva; Bangon-bangon; and Patrocino, Claveria, all in Misamis Oriental, plus some private dairy projects, assisted by the Ministry of Agriculture, produced 15,782 liters of milk which were distributed to the milk needs of children particularly in Misamis Oriental. Fresh milk produced by the Malaybalay Stock Farm was made available to the children in nearby municipalities of Bukidnon.

The Kambingang Barangay program in the region was able to secure a loan from two rural banks in Misamis Occidental amounting to P11,730, enabling the program to purchase 78 head of improved bred goats which were loaned to 23 farmers in the municipalities of Calamba and Jimenez. To increase quality breeder stocks for dairy production, the "Bakahang Barangay Palahian" which was implemented in the later part of 1982 also released the amount of P300,000 to 30 borrowers in the municipality of Villanueva, Misamis Oriental.

Livestock auction markets situated in the municipalities of Cogon and El Salvador (Misamis Oriental) and Valencia, Bukidnon, have continued to maximize the profits of livestock farmers. Marketing technicians and local government officials worked hand in hand in the campaign to enable more livestock raisers and traders to avail of the facilities of these livestock markets. As of December 21, 1982, a total of 11,633 head of cattle, carabao and horses was sold valued at P16,124,376.

The region during the year engaged in intercropping as a step towards all-out involvement in multi-cropping systems. Common sights in the region are coconut farms intercropped with tomato crops in the province of Misamis Occidental. Inter-

cropping also gained popularity with farmers in the cold plains of Bukidnon and Misamis Oriental where coffee, cacao and tomatoes found a sure cash-earning intercrop as the region's most in-demand crops.

Gulayan sa Kalusugan (GSK) program was vigorously implemented in the provinces of Misamis Oriental and Bukidnon, with outreach sites in Misamis Occidental, Agusan del Norte, Agusan del Sur, and Surigao del Norte. With the GSK implementation, tomato became a major vegetable crop in the region. Weekly output this year was 337 metric tons with an average farm-gate price of P1.61 per kilogram, which was within the production rate target. The tomato industry has withstood pressures over the years through a system of rationalized production, accreditation of producers and traders, monitoring of farm-gate prices production volume and commodity flow, post-harvest handling and quality control, and constant dialogue with farmers.

In vegetable and fruit production, a total of 608,302 metric tons was produced with 83,905 metric tons coming from vegetables and 524,397 metric tons from fruits. Rootcrops production yielded 229,058 metric tons. Increase in the production of vegetables and fruits could also be attributed to the researches undertaken at the Claveria Experiment Station (CES). Major commodities handled by CES were tomato, white potato, snapbeans, curcifers, eggplants, peanut, gabi, sweet potato, and winged beans. Seeds produced from CES were augmented by two other seed-producing institutions in the region -- the Kibawe (Bukidnon) and San Francisco (Agusan del Sur) Seed Farms -- all of which catered to the seed needs of farmers in Northern Mindanao and other parts of the country.

Plant support services also contributed much to the food production program in the region. The plant quarantine services (PQS) for instance, prevented the movement of plants and/or plant products from infested areas to places free from infestation of injuries, pests and diseases. Through the PQS, exporters were assisted in terms of plant material certification of 57,907 metric tons of fresh fruits and other plant products valued at P6,169,828. Technical assistance vis-a-vis extension services thru farmers classes and interpersonal approach was availed of by 25,250 farm-

ers under fruit production covering 28,532 hectares with an estimated production of 79,661 metric tons. Under vegetable production, 31,500 farmers were served with an aggregate output of 8,914 metric tons from 4,359 hectares.

Plantation crops, such as rubber, coffee, cacao, ipil-ipil and hanga, found in Region X in the midst of developing these important commodity crops during the year in review. Spearheading rubber production in Northern Mindanao are two landlocked and typhoon-free provinces of Agusan del Sur covering around 5,500 hectares and Bukidnon covering 1,178 hectares under cultivation. Of the total hectareage in Agusan del Sur, 2,638 hectares were tilled by small farmers and were financed by the Development Bank of the Philippines in the amount of P11 million. Other corporate farms in the area which embrace more than 50 per cent of the area planted to rubber were financed by the DBP. On the other hand, rubber production has become lucrative in the province of Bukidnon. Last year, total area planted to rubber reached 1,178 hectares and produced 1,658 metric tons of dry rubber. This year and up to 1990, the total hectareage is expected to reach 3,391 hectares with a projected yearly production of 4,790 metric tons.

Because of the attractive market price of coffee, many farmers in the region, especially in Bukidnon, were encouraged to plant coffee. Some 12,921 hectares were planted in 21 municipalities. Farmers in Bukidnon organized themselves into associations in order to have collective bargaining power in the market. Members of these associations were likewise required to plant a maximum of 3,000 hills each.

Cacao, as a plantation crop like coffee, was entrusted for development to the private sector composed of both small and corporate farmers. The Ministry of Agriculture, thru its various experiment stations in Claveria, Misamis Oriental, Kibawe, Bukidnon, and San Francisco, Agusan del Sur, produced 3,785 pieces of planting materials, which will be sold/distributed to cacao farmers.

Planting of ipil-ipil trees in the region was encouraged. The Claveria Experiment Station during the year in review produced and distributed 5,000 seedlings to the public and private

schools as well as farmers. This year, however, the CES reduced its annual target from 8,000 to 5,000 seedlings because other institutions intensified their ipil-ipil production like the Bureau of Forest Development and PROFEM.

As a contribution to the energy program, the hanga tree production was vigorously pursued. There were 1,315 planting materials from the BPI in Manila distributed to the MA experiment stations for propagation.

In cooperatives development, the region's thrusts were focused in the organization, supervision and auditing of Samahang Nayons (SNs) Kilusang Bayans (KBs), and Area Marketing Cooperatives (AMCs). At year's end, 1,842 SNs were organized with a total membership of 102,809. Registered SNs reached 1,672 with 88,983 members. In their efforts to put up income-generating projects, these SNs achieved a region-wide fund collection of P2,161,290 for general funds; P4,424,338 for barangay guarantee fund; and P2,975,553 for barangay savings fund, all totalling P9,561,181.

Extending financial support to cooperatives' organizational members and the public are four Cooperative Rural Banks (CRBs), located in the provinces of Bukidnon, Misamis Occidental, Misamis Oriental, and Camiguin with an aggregate paid-up capital of P6,802,426 shared among 60,160 members. CRBs in the region will increase with the conversion of the Rural Bank of Talacogon, Inc., in Agusan del Sur into a Cooperative Rural Bank.

The year also witnessed the active participation of the Kilusang Kabuhayan at Kaunaran (KKK) through its involvement in the SNAP-KKK projects wherein a total of 359 SNs engaged in various projects such as crop production, livestock production, post-harvest facilities, agro-livestock, aqua-marine, food and fish-meal processing, cold storage and marketing. Aside from personnel and clientele development, cooperatives development-related activities included the assistance extended to SNAP-KKK proponents for feasibility study preparation, audit of 31 cooperatives, inspection of 11 pre-cooperatives, evaluation of 28 cooperatives for 1982 search for the "Most Outstanding Cooperative" and the conduct of the terminal evaluation of the cooperatives' component of the Agusan del Sur and Bukidnon settlement areas.

Under the nutrition program, intensive campaigns on nutrition education, prevention of malnutrition and rehabilitation of malnourished children, as well as homeyard food production, were mounted. Where malnutrition was prevalent, malnutrition projects were established and benefited 54,380 farm families and 13,287 children. Some 516 Rural Improvement Clubs and Anak Bukid Clubs with a total membership of 12,490 were encouraged to raise vegetables and other income-generating projects like food trades, handicrafts and clothing. Vegetables and the kadios, papaya, malunggay and seguidillas (KPMS) production totalled 1,988 metric tons.

Other special projects/support programs pursued by the region during the year in review, were:

1) The Rainfed Mindanao Project (RMP), aimed at increasing agricultural productivity in rainfed areas in Northern Mindanao, specifically in Agusan del Sur with 18,344 hectares; Bukidnon with 9,251 hectares; and Misamis Oriental with 8,170 hectares. Pre-project implementation activities undertaken during the year were soil analysis of 761 samples and massive soil survey involving 16,261 hectares. As envisaged, the RMP would effectively increase farmers' income through the adoption of multiple cropping technology even in non-irrigated areas.

2) The Extension Delivery System (EDS) which has contributed a remarkable share in improving the lot of small farmers in terms of agricultural production and income increment, served no less than 5,000 farmers, 1,753 homemakers, and 834 Anak Bukid members with the active assistance of 1,100 contact leaders in the provinces of Bukidnon, Misamis Occidental, Misamis Oriental, Agusan del Sur and Surigao del Norte. Boosting the adoption of technology in these areas were a number of demonstration farms which become show windows of agricultural innovations and sources of seeds for EDS farm families. The distribution of mongo-corn kits to contact leaders paved the way to a large extent to an accelerated technology adoption. Another success factor to the system was the allocation of 39 agricultural extension centers prorated among the 7 provinces. Twenty-

five centers were completed this year which also served as class and training venues for farm families and demonstration sites for technical advancement in agriculture, home-making and youth development.

3) Complementation Program, which was launched on November 17, 1981, at Claveria, Misamis Oriental, designed to unify the diverse efforts of the four program thrusts of the Integrated Agricultural Production and Marketing Project (IAPMP), namely, technology packaging, extension delivery system, market assistance center, and cooperative development for effective service delivery. Along this line, the region conducted a series of personnel and clientele development activities, established barangay offices, organized producers and marketing cooperatives, etc.

4) Water Impounding Project (WIP) was vigorously pursued to minimize floods, control erosion and develop rainfed areas into productive farm lands through proper soil and water management. A regional WIP task force was organized during the year to oversee project implementation activities. At year's end, 8 feasibility studies were completed and 33 WIP sites were identified in the provinces of Surigao del Norte, Agusan del Norte and Bukidnon.

REGION XI (SOUTHERN MINDANAO)

The year 1982 saw this region suffer tremendous setbacks in crop production as it suffered the longest drought that damaged about 75 per cent of the crops planted during the latter part of the year. It also witnessed one of the worst tungro infestations which destroyed 1,800 hectares of riceland in South Cotabato. Despite these setbacks, total rice production in both programmed and rice-sustaining areas registered 512,405 metric tons from a hectarage of 193,050.

Total corn production in both programmed and unprogrammed areas accounted for 1,067,930 metric tons from 798,240 hectares. There was a sharp rise in the production of yellow corn under the MaiSagana program area planted, production per hectare, and the number of corn farmers. Area planted to yellow corn increased threefold from 6,703 hectares in 1981 to 18,833 hectares this year.

In feedgrains production, the region chalked up a total of 1,965 metric tons of sorghum from 734 hectares and 6,410 metric tons of soybeans from 4,615 hectares. This year's production represents about 33 per cent of the regional requirements, which amounts to 19,066 metric tons.

In the promotion of the livestock and poultry industries, tremendous gains were made in the areas of Bakahang Barangay, Babuyang Barangay, Kambingang Barangay and Manukang Barangay, all under the supervised credit program, animal dispersal, artificial breeding animal disease control and quarantine. At year's end, 15,650 head of cattle under the Bakahang Barangay, 3,585 swine under the Babuyang Barangay, 200 goats under the Kambingang Barangay, and 3,900 layers/broilers under the Manukang Barangay were fattened and raised by 4,750 small beef producers/farmers thru a P49,848,678 million barangay loan from rural banks.

Some 320 head of cattle, 16 boars, and 26 goats were dispersed to smallholder farmers. From this dispersal, the region acquired 195 animals: 57 cattle, 16 swine, and the rest, goats. Natural breeding accounted for 958 services. Artificial insemination services on 6,144 swine accounted for 31,649 offsprings, 48 on cattle and 2 on carabao but no offspring. Vaccination made on large and small animals registered 840,325, diagnosis treatment 268,410; and castration 310,586. On quarantine and inspection, 1,558,479 head of economic animals were examined and 325,607 of these were inspected and given clearance for shipment to other provinces and Metro Manila.

Under vegetable production, 2,385 metric tons of green leafy vegetables were produced from 1,182 hectares; and 2,700 metric tons of fruit vegetables from 2,433 hectares. Mongo production reached 520 metric tons compared from last year's 284 metric tons. Peanut production rose from 241 metric tons to 502 metric tons. Rootcrop production rose from 241 metric tons to 502 metric tons. Peanut production rose from 241 metric tons to 502 metric tons. Rootcrop production chalked up 29,387 metric tons of cassava from 3,736 hectares; while sweet potato, gabi, ubi, and others registered an overall production of 46,635 metric tons from 6,852 hectares.

The region has continuously intensified its efforts in the development of plantation crops like

banana, pineapple, coffee, cacao, cotton and rubber. The breakdown of areas (hectares) planted to crops and its corresponding production at year's end follows:

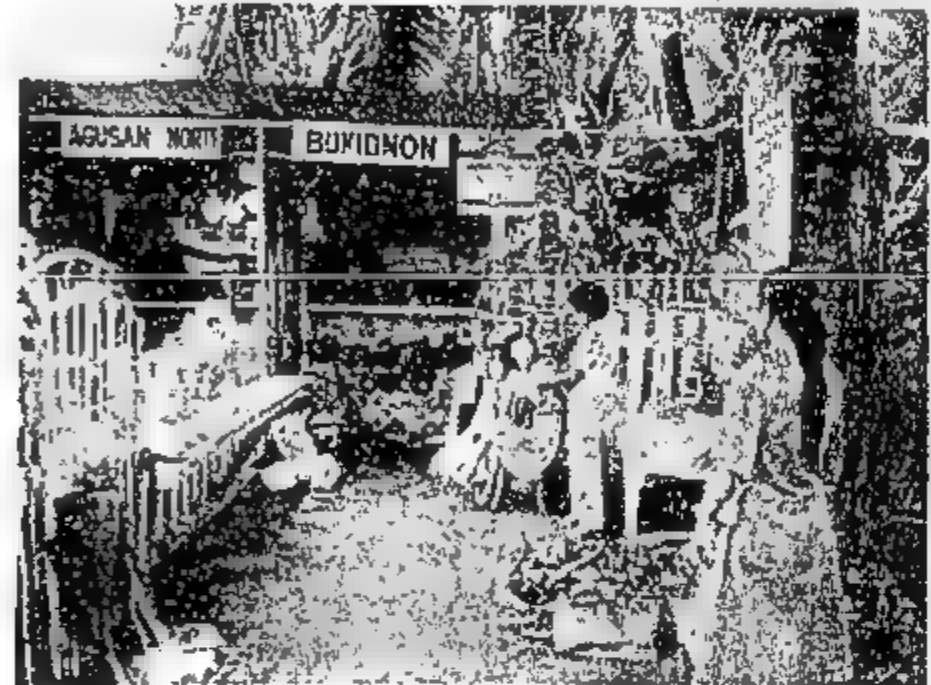
Crop	Area (hectares)	Production (M.T.)
Banana	2,510	28,400
Pineapple	12,500	125,000
Coffee	7,527	5,504
Cacao	5,389	6,170
Cotton	2,750	3,905
Rubber	1,541	1,304

In cooperatives development, identification of Samahang Nayons for Action Program (SNAP-KKK), organization, registration and auditing of SNs and cooperatives were the primary concerns of the region. For 1982, 159 SNs were identified under the SNAP-KKK tie-up. Out of these, 99 SNs had livelihood projects with an estimated cost of P13,546,742. Twelve SNs submitted project feasibility studies and five of these were evaluated by the Ministry of Human Settlements which granted a P210,000 loan. Likewise, 8 cooperatives and one SN were registered and added to the roster of cooperatives in Region XI, totalling 175 cooperatives and 1,002 SNs. On the other hand, 27 SNs and 5 cooperatives were audited.

As of December 31, 1982, the status of cooperatives in the region is, as follows:

Total number of registered cooperatives . . .	175
Total number of operating/reporting cooperatives	129
Membership	74,136
	500 SNs/KBs
Paid-up capital	P47,034,345
Assets	P86,544,993
Net Savings	P 3,605,388
Reserves	P 2,991,220

Intensive campaigns on nutrition education, prevention of malnutrition and rehabilitation of malnourished children, homeyard food production and income-generating projects were undertaken. Under the malnutrition prevention program, prevention of malnutrition among the vulnerable



group of 0-18 month old infants was emphasized thru proper feeding of infants by means of adequate supplementary food and breast feeding. On this aspect, there were 15,471 participants with 7,004 enrollees in this year's program. On the preventive cases, out of 4,008 infants graduated, 3,306 graduated within the nutritional level 3. There were 191 infants rehabilitated.

Some 47,959 rural womenfolk thru the Rural Improvement Club (RIC) were engaged in gainful occupation like raising fruits and vegetables, food processing, poultry and swine raising. Output results were 374,332 kilograms of fruits and vegetables; 47,096 kilograms of processed food; 183,235 chicken and 15,275 head of swine. Other activities designed to teach womenfolk skills and income-generating projects were making garments, cacao tablets, coco-vinegar, salted eggs, banana chips, kropeck, candies, slippers, and meat processing. There were 57,603 families served along this line.

Also involved in these undertakings were 233

Anak Bukid Clubs and no less than 5,600 members ventured in cattle fattening, mungo production, peanut production, goat raising and food processing. These projects turned out 91,070 kilograms of fattened cattle, 50.7 kilograms of mungo, 79 kilograms of peanut, 2,197 head of goats and 2,463 kilograms of food processed. Anak Bukid Clubs likewise produced 20,530 fowls, 1,024 head of swine, 2,346 pieces of clothing and 2,360 pieces of handicrafts. In support to the various strategies of the program, an aggregate of 6,946 homemakers, youth leaders and Anak Bukid trainings, classes and farm-home visits, as well as sessions, were conducted and attended by 19,276 members.

Along seed production, through the joint efforts of the Seed Growers Association, the Tupi Seed Farm and the Davao Experiment Station, a total of 711.3 hectares was cultivated -- 697 hectares for rice, 12.75 hectares for corn, and 1.55 hectares for soybeans. From the hectareage set aside for rice, the region produced 51,992 cavans of 2,339.6

metric tons of palay seeds, broken down to 67.55 metric tons of registered seeds, 2,033.73 metric tons of certified seeds, and 32.13 metric tons of good seeds, and the rest were under analysis. Total seed output decreased by 1,024 cavans from that of last year's due to flood damage. At year's end, palay-seed distributed reached 26,276 cavans sold to Masagana 99 and non-M-99 farmers, 400 cavans for export, and the rest were served for January-February planting. On the other hand, corn seed production was only 229.5 cavans.

In plant material production, 58,844 pieces of assorted sexually and asexually propagated fruit trees were produced. However, there was no record on the number of plant materials distributed.

Under soil survey and land classification, 1,450,737 hectares were surveyed for the production of soil-based maps; and 10,055 hectares were placed under soil conservation and erosion control. There were 1,940 feasibility studies conducted under the water impounding project wherein 1,553 farmers were served. In support to food production, agrarian reform and agro-energy development; while 4,153 soil samples covering 26,408 hectares were analyzed serving no less than 1,735 farmers. Other activities dealt on soil fertility, conducted investigations and verification trials for rice, corn and other crops on farmers' fields in support to the NFAC, URARTIP and PAGASA projects.

REGION XII (CENTRAL MINDANAO)

Considered to be the top rice producer in the whole island of Mindanao, Region XII, during the year in review, registered a total rice production of 695,525 metric tons in both Masagana 99 and rice-sustaining areas covering 263,540 hectares. This production is slightly lower than last year's yield of 714,605 metric tons. This may be attributed to the fact that there were still areas that were not harvested and reported, especially under the Masagana 99 Phase XIX. In both programmed and non-programmed areas, 85,543 farmers were served.

Corn production both under the programmed and unprogrammed areas recorded a total of 657,350 metric tons, covering 485,790 hectares, with the Masagana program absorbing a total of

32,888.05 metric tons. The corn and feedgrains program yielded a total of 98,688 metric tons from a total area of 55,478 hectares harvested. All in all, no less than 40,000 farmers were assisted and served in both programs.

The region has continuously given priority to the promotion of livestock and poultry development, where most of its activities centered on animal dispersal, artificial breeding, forage and pasture development, animal health disease, animal quarantine and special projects such as the Bakahang Barangay (breeding and fattening), Kambingang Barangay, etc. Under the animal dispersal program, animals of different types were dispersed to deserving farmers whose main objective is to start their foundation stock as well as to upgrade their current stock. Stocks by species dispersed were 300 head of cattle, 77 head of carabao, and swine, 27. Since there was no requisition from farmers and raisers, no goat, duck and chicken was dispersed. Artificial breeding was intensified to upgrade the cattle and swine stocks. About 57 head of cattle and 1,270 head of swine were artificially inseminated.

As a major component of livestock development, the region also directed its efforts towards the development of forage and pastures. With the help of farmer-cooperators, its regional farms/breeding centers/stations were able to improve and develop 57.5 hectares which were planted to legumes and grasses. These farms serve as sources of planting materials for distribution to farmer-cooperators. Some 250 kilograms of seeds as well as 2,500 seedlings were distributed to farmer-clienteles. No major outbreak of infectious animal diseases was reported during the year in review. The number of animals diagnosed and treated in connection with the eradication and control of liverfluke totalled 92,664; whereas in immunization control and prevention of other animal diseases, 213,949 animals were treated and 207,406 animals were examined and vaccinated. Likewise, veterinary quarantine and inspection services registered a total of 106,370 head of economic animals examined for shipment to other places.

The Bakahang Barangay with its two features; fattening and breeding ("palahian"), and the Kambingang Barangay were vigorously pursued. At year's end, 15 accredited rural banks participated in both Bakahang Barangay and Kambingang

Barangay programs. Under the Bakahang Barangay fattening, 820 head of cattle were fattened by 336 small beef producers/farmers thru a P2,141,278 loan; and another 498 head of cattle under the Bakahang Barangay breeding "palahian" were dispersed to 174 farmers thru a P2,214,056 loan from rural banks. On the other hand, 65 farmer-borrowers availed of the credit under the Kambingang Barangay. A total of 483 head of goats was financed from a loan release of P51,760.

In leafy and fruit vegetable production, 13,971 hectares were planted to assorted vegetables and fruits with a total production of 13,741 metric tons. No less than 30,476 farmers were assisted in this endeavor. Increase in the production of rootcrops was also recorded due to substantial increase in hectarage planted. Rootcrops production, excluding cassava, registered a total yield of 558,733 metric tons from 29,398 hectares; while cassava production totalled 139,222.8 metric tons. Farmers served reached 6,457.

The year that passed also saw the region engage in the development of plantation crops such as banana, coffee, cacao, rubber, sugarcane, abaca and coconut. Listed hereunder are the commodity crops developed by the region with their corresponding hectarage production:

Crops	Area Planted (hectares)	Production (Metric tons)
1. Banana	34,880	810,496
2. Coffee	32,868	29,100
3. Cacao	992	2,106
4. Rubber	29,208	41,380
5. Sugar cane	8,668.5	45,462
6. Abaca	17,043.75	150,382
7. Coconut	505,813	2,693,166

With the effective implementation of the Nutrition program, nutrition education for pre-school children, pregnant and lactating mothers, malnutrition prevention, supplementary feeding and income-generating projects were vigorously pursued. Some 5,978 pregnant and lactating mothers, as well as 14,157 infants and pre-schoolers, benefited from various malnutrition projects. With 146 insumix centers established and operational, 2,961 infants were given insumix. Around 24,685 training sessions, classes, meetings and home visits were conducted for homemakers and Rural Im-

provement Club members with an attendance of 77,611 womenfolk. The coverage reached 92 municipalities and 286 barangays.

To improve the nutritional status of the rural folks and to augment their income, farm families were encouraged to undertake income-generating projects, like raising vegetables and fruits, food processing, poultry and livestock. As a result, total production from these projects accounted for 116.13 metric tons for vegetables and fruits; 66.84 metric tons for food processed; 41,497 fowls; 66,087 swine; 374 goats; and 32,497 plants under the KPMS (kadyos, papaya, malunggay and seguidillas) project.

Anak Bukid Clubs with a total membership of 9,122 likewise produced 536 head of cattle, 1,784 goats; 1,321 swine; 17,351 fowls, 80.2 metric tons of mongo and peanuts, 58.2 metric tons of vegetables and fruits; and 323 metric tons of potato and cassava. On income-generating projects, such as clothings, handicrafts and food processing projects, 346 AB Club members also produced 596 pieces of clothings valued at P8,791; 913 pieces of handicrafts, P8,380; and 853 kilograms of processed foods, P6,199.

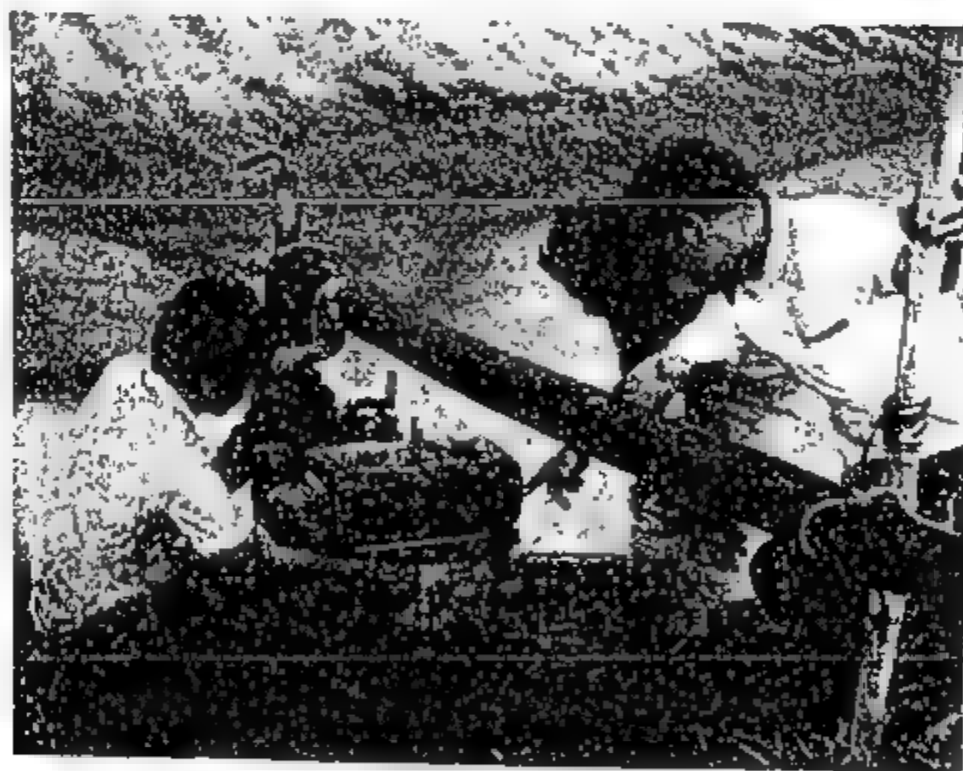
During the year in review, the region has continuously provided farmers seeds of high-yielding rice and different seed varieties, such as grains and vegetables. Seed production was carried out by seed growers in the provinces, Midsayap Experiment Station, Kidapawan Experiment Station complex, and Aroman Seed Farm. Palay seed production from an area of 373 hectares in Midsayap registered 879.02 metric tons. On the other hand, the Kidapawan Experiment Station complex and Aroman Seed Farm with a total area of 72.5 hectares planted to corn and other agricultural crops, such as mongo, squash, bush sitao, peanut, patola and soybeans registered an overall seed production of 84 metric tons. Out of these seeds produced by both private seed growers and experiment stations/seed farms, a total of 575 metric tons of seeds was distributed to end-users.

Production of planting materials, especially of fruits and plantation crops, and medicinal plants, was vigorously pursued in both private and government nurseries. As of December 31, 1982, 61,133 fruit trees, 3,600 rubber trees, 29,732

ipil-ipil seedlings, 4,000 black pepper cuttings, 5,000 cassava cuttings, and 93,000 sweet potato cuttings were produced. Around 221,916 pieces of planting materials were distributed either sold or given free.

As part of the region's crop protection activities, various pest infestations were significantly reduced because of the effective implementation of the Surveillance and Early Warning System (SEWS). A total of 263,131 hectares was covered, benefitting 43,112 farmers.

Soil survey and classification activities registered an accomplishment of 223.42 percent as 47,802 hectares of the targeted 34,750 hectares were surveyed and classified; 4,202 hectares surveyed for the production of soil-based maps. A total of 3,638 hectares was placed under soil conservation and erosion control. There were 135 fertility and management trials conducted; 5 soil fertility maps updated; and 195 fertility trials conducted in support of NFAC, URARTIP and PAGASA projects.



Accomplishments of the Ministry of Agriculture's Staff Bureaus and Attached Agencies

CHAPTER III Calendar Year 1982

BUREAU OF PLANT INDUSTRY

The Bureau of Plant Industry (BPI), is responsible for the development of the plant industries of the country to promote and accelerate agricultural development, thereby increasing the farmer's income and uplift his well-being.

For Calendar Year 1982, the BPI pursued four major programs namely: 1) Agricultural Research, 2) Crop Production, 3) Crop Protection, and 4) Field Trials Services; and four special projects, namely: 1) Phytolum "Hanga" Project, 2) Expanded Seed Production and Distribution Project, 3) Peppermint and Citronella Pilot Project and 4) Kilusang Kabuhayan at Kaunlaran (KKK). Its various activities were focused along the Agriculture Ministry's thrusts on food production and nutrition promotion, export generation and import substitution and agro-energy development. Emphasis were placed in the development of rainfed agriculture and multiple cropping systems; strengthening of the seed industry; and development of integrated pest management.

In the field of crop research, 647 research study units on various crops were conducted at different stations located strategically throughout the country. As of December 1982, 15 of these study units were terminated. Significant research findings were also developed along the lines of culture and management for corn, mango, blackpepper, millet, barley, buckwheat, medicinal plants and orchids. Likewise, improved intercropping system was developed for sweet potato and cassava. Research on crop protection was developed for sweet potato, coffee and tobacco, and research on varietal improvement gave vital results for sorghum, rice, corn, cashew, wheat and triticale.

The Laboratory Services undertook crop utilization and processing researches and provided common laboratory services for crops to service both the government and the private sectors. Along this

line, 54 research studies were conducted on crop utilization and processing. Of these studies, salient findings were developed on cereals (rice, corn), rootcrops, (cassava, white/sweet potato, arrow-root), vegetables (machiku-bamboo, tomato, pechay), medicinal and ornamental plants (borbur-tak, chichirica, ilang-ilang), legumes (winged bean, mungbean, soybean, peanut) and oil-bearing plants ("hanga"). Operational activities also included chemical analysis conducted on agricultural samples, food processing services, and microbiological examinations.

Under agricultural engineering, the Bureau conducted researches aimed at developing low-cost and simple farm tools and implements. During the year, 18 research study units were undertaken in the central office. Studies that rendered tangible results were on the (1) design and development of hand tools and animal-powered implements (animal-drawn land leveller/puddles, manual and/or animal drawn dryland seeder, animal-drawn rural transport; manual and/or animal-powered grinders and mixers, irrigation and drainage devices; (2) design and development of small tools and equipment for mungbean, production and processing (rice hull furnace, soybean/mungbean threshers and mungbean and soybean seeders); (3) design and development of a single and double row corn planter; and (4) search for a profitable tillage system for lowland rice production.

The MA-IRRI Industrial Extension Program was implemented by the Bureau by introducing small farm equipment (designed and developed by the BPI, IRRI and other research development institutions) to farmers and agricultural machinery manufacturers. Farm implements like thresher, reaper and axial flow pump were given priority for extension services. Trainings and demonstrations on the use of these equipment were undertaken for farmers and small manufacturers in the different provinces of the country.

Under the crop production program, intensified production of quality seeds of high-yielding varieties with genetic identity was carried out in its different experiment stations, seed farms and seed testing laboratories to sustain the seed requirements of the country. From 856 hectares planted, it produced 2,705 metric tons of assorted high quality seeds and 380,000 cuttings; procured 157 metric tons of seeds and distributed 142 metric tons of seeds.

During the typhoons "Emang" and "Dinang," the Bureau was able to sustain and make a modest contribution of rehabilitating farmers by distributing assorted seeds in Bulacan, Bicol and Northern Samar valued at P374,390. After the flash floods in Regions 10 and 11, palay, corn and mongo seeds worth P334,202 were also distributed. It also supervised and conducted quality control on 44,044 seed samples and 77,942 seed tests on different crops.

Under field trial services, there were 285 trials conducted in the farmers' field of activities throughout the country for various agricultural crops. Terminated trials were on rice (during dry season), soybeans, peanut, mongo and pole sitao (dry season). On-going trials included two special projects: 1) Rainfed Agricultural Development Outreach Site (RADOS) and 2) Bureau of Plant Industry Man-and-Biosphere (BPI-MAB).

The Phytolium "Hanga" Tree Project was relentlessly pursued. Started in 1981, this project aims to develop the oil plant "hanga" as an alternative indigenous source of energy to help abate the huge annual importation of crude oil that drains the country's foreign exchange reserves. Along this line, 235,000 "hanga" planting materials were produced and 51 kilos of seeds were collected in 31 BPI/MA stations of the country. Of this output, 113,000 planting materials were distributed to interested growers and project stations. Continued research activities on "hanga" are still being conducted in different stations.

A special project of BPI is the Peppermint and Citronella Pilot Production Project. Citronella and peppermint plants are not new to Filipino farmers. Oils extracted from these plants are commonly used for flavoring and in the manufacture of shampoo, perfume, soap, and other related products. Launched July 1982, this pilot project

aims to produce quality planting materials for the farmers' needs. Initially, two-and-a-half (2.5) hectares were planted to citronella in Leyte, while half (0.5) a hectare of peppermint was planted at Davao Experiment Station. An oil extracting unit was installed by a private company to service farmers near the Romualdez Experiment Station in Leyte.

The Kilusang Kabuhayan at Kaunlaran Movement which was established by Executive Order No. 715 dated August 6, 1981 was encouraged to spur economic and social development of the country. A Memorandum of Agreement was entered into by and between the Ministry of Human Settlements on October 26, 1981, making the BPI a lead support agency and another one on February 19, 1982, expanding its responsibility as a lead implementing agency for agro-livestock prototype under crop sector. As of December 31, 1982, 2,480 crop projects were approved for KKK financing benefitting around 16,139 beneficiaries with a total funding of P132,488.50. Releases from various banks reached a total of P35,472,246 for 1,837 crop projects. Some 808 projects are under evaluation and 17 crop projects are under feasibility study preparation.

BUREAU OF AGRICULTURAL EXTENSION

The strengthening of agricultural extension services remains the responsibility of the Bureau of Agricultural Extension (BAEx) in the overall national effort to uplift the standard of living in the rural areas. As in the past two years and pursuant to the provisions of P.D. No. 1569, BAEx provided staff support to the Ministry of Agriculture in the effective delivery of agricultural extension services.

In Calendar Year 1982, the Bureau's key programs centered on the promotion of improved farm management practices and methods; nutrition education and the prevention of malnutrition among infants; rural youth development; communication support for agricultural extension activities; and personnel training and clientele development. All these were aimed at attaining self-sufficiency in food; increased income; better nutrition; wholesome rural homes and better quality of community life; and energy conservation.

Along crop extension support program, so as to accelerate the application of research findings in farmers' field, 10,750 units of farm trials were conducted by and participated in by the Bureau of Agricultural Extension in cooperation with other agricultural institutions like the IRRI, PCARRD, NFAC and the Ministry of Agriculture.

Assistance in the conduct of the training program for MA extension personnel was also provided by the Bureau's subject matter specialists (SMS) who develop teaching materials and serve as resource persons in the series of project management seminar-workshops in agricultural extension, particularly for the Municipal Agricultural Officers (MAOs).

The bureau likewise carried out other substantive activities in developing community-based organizations, particularly the Farmers Associations, as major entry point for agricultural development. One such activity was the workshop on rural organizations for development participated in by 15 officers and 11 members of various rural organizations, together with policy makers, designers and implementors of programs on rural organizations.

Highlights of the Bureau's accomplishments during the year in review are the following:

- *More active participation of rural women in the uplift of the family and community with the inclusion of a new program emphasizing the role of women in development.
- *Greater involvement of the youth in agricultural pursuits through such programs as the "Kabataang Sakahan para sa Kaunlaran" (KASAKA), the Philippine Agricultural Training Program (PATP) and the International Farm Youth Exchange (IFYE) and Asian Farm Youth Exchange (AFYE) programs.
- *Due recognition of the Philippine agricultural extension service, particularly the youth development program via the country's hosting of the 4th International Farm Youth Exchange (IFYE) World Conference.
- *Manpower development in agriculture through intensified training of some 1,879 BAEx staff and MA field extension personnel and 3,131 clientele leaders.

*Completion of the construction of 69 units of agricultural extension centers under the National Extension Project (NEP).

*Loaning out, as of this year, of 2,809 motorcycles for increased mobility of MA field extension workers.

*Continued strengthening of rural-based groups — the Farmers Associations (FAs), Rural Improvement Clubs (RICs), and Anak Bukid (AB) Clubs.

BUREAU OF ANIMAL INDUSTRY

In Calendar Year 1982, the Bureau of Animal Industry (BAI) achieved significant strides through its three major supervised credit programs to revitalize the livestock industry.

Along Bakahang Barangay fattening, 172,704 small farmer-raisers availed of loans totalling P320 million to finance the fattening of 319,804 cattle. By comparison, the total number of project borrowers was 134,157 in 1981, fattening 242,542 cattle under a financing loan of P242 million. Repayment average was placed at 95 per cent.

Under the Bakahang Barangay (cow-calf) and Kambingang Barangay programs, P1.8 million loan was released to 172 project borrowers who were engaged in backyard cattle breeding.

The Kambingang Barangay's project loans went up from P4.9 million in 1981 to P15 million in 1982, to finance the breeding and fattening of 59,897 goats. Only 22,657 goats were financed during the previous year.

As regards Livestock Commodity Loan for animal dispersal, the bureau dispersed 7,602 cattle, 50 carabao, 1,910 goat and 1,920 swine. For the past two years, the dispersal figures covering the above species were 11,393 cattle, 323 carabao, 5,450 goat and 5,101 swine.

To support the national nutrition program in 1982, a total of 139,516 liters of fresh and toned milk was produced at the Bureau of Animal Industry dairy farms and processing plants, and fed to pre-schoolers and school children in priority areas throughout the country.

Livestock Support Services

Highlighting the BAI's 1982 accomplishments in the major programs implementing livestock support services are the following:

1. Animal health services —

Massive vaccination of different animal species against various disease, broken down as follows: 1,200,000 head against hoof-and-mouth disease (HMD); 7,127,700 against hemorrhagic septicemia (hem-sep); 86,144 against swine plague; 7,916 against anthrax; 17,196 against blackleg, and 18,500 against rabies.

2. Animal feed control services —

From January to October 1982 registered feed-millers, feed dealers and other establishments in the feedmilling industry totalled 2,090; while feed samples collected and analyzed were 12,144.

BUREAU OF AGRICULTURAL ECONOMICS

In line with the Ministry of Agriculture's thrust for the 1980's, the Bureau of Agricultural Economics (BAEcon) during the year in review continued to intensify its efforts to collect and provide current agricultural information on crops and livestock, socio-economic research studies, economics of farm production and marketing. Likewise, BAEcon strengthened the data processing division to further develop the data processing capabilities of the bureau.

In response to a long felt need, BAEcon launched its most ambitious undertaking — the Regional Agricultural Data Delivery System (RADDS) project. Started in the early part of 1980 in two regions — X and III followed by region VI in 1981 — the year just ended may be considered as the most productive so far. During the year, the Bureau was able to implement RADDS in three other regions, namely: I, VII and XI. Training activities for the RADDS in regions II and VII were also launched during the year and its actual implementation slated in 1983. Other regions not yet covered — Regions V, IV, IX and XII — are scheduled for the same year. During the two-year period of the project BAEcon made a breakthrough in its data system with the operation of a machinery to produce more comprehensive and better quality statistics. In regions where RADDS are operational, BAEcon has been able

to provide statistics on rice and corn and livestock and poultry at all levels — national, regional, provincial and municipal. Without RADDS, however, the Bureau could only generate data on the regional and national levels. The project is the long-awaited answer to the demands of regional development where agricultural data at the local levels are critically needed for sound policy formulation. The basic characteristic of the system is the decentralized integration of all phases of statistical surveys. Planning and execution of surveys, including processing, are done independently at the lowest operational units of the province — the municipality. More precise data are now generated as seen from the low error percentage of statistical estimates compared to data generated from non-RADDS regions.

To avail of the data-gathering capabilities of RADDS, the Ministry of Agriculture Integrated Management Information System (MAIMIS) was conceptualized so as to monitor all programs and projects of the Ministry of Agriculture. MAIMIS can only be established in regions where RADDS is operational. It is through the MAIMIS where projects and programs of the MA are monitored and analyzed for the information and prompt action of the Minister of Agriculture. MA personnel based at the regions are detailed at BAEcon offices in the field to gather information on the progress of all programs and projects of the Ministry of Agriculture.

Regular agricultural statistical activities were continued to provide policy-makers data on crops and livestock on which to base sound policy decisions in agriculture. The following were the regular activities conducted during the year:

The Rice and Corn Survey (RCS) was pursued in four rounds during the year, providing area and production estimates of rice and corn. Other information, like percentage distribution of harvest by month, and crop type were also collected and processed.

The Livestock and Poultry Survey was conducted and this year it was made an integral part of the RCS. During previous years, this survey was conducted in collaboration with the Bureau of Animal Industry (BAI) but it is now conducted solely by BAEcon on a quarterly basis. Livestock inventories by kind, sex, breed, and age group,

by region and province, are provided by this survey. These information are categorized into backyard and commercial farms, or small and large-scale farms.

Also a regular activity, the survey on animals slaughtered in abattoirs was pursued in collaboration with the National Meat Inspection Commission (NMIC) and the BAI. This nationwide survey was undertaken in 680 abattoirs. A quarterly undertaking, the survey provides data on the number of animals slaughtered, by kind.

Conducted in a joint undertaking with NFAC, the Management Information System of the Masagana 99 and MaiSagana programs was pursued. Monthly reports covering programmed areas were rendered on the progress of area planted, production estimates, financing, program participation, and the presence of pests and diseases. This report is used particularly by NFAC for monitoring the major grains program of the government.

BAEcon likewise played a significant role in the implementation of Executive Order No. 803 which establishes an Integrated Area Management System for Agricultural Services. The Bureau participated in workshops and seminars in the regions in order to acquaint local officials in the formulation of a sound data base for the preparation of comprehensive plans of agricultural activities. A prerequisite to good planning is the availability of reliable data base at all levels of planning, specifically at the provincial level. On this particular aspect, the Bureau played a pivotal role in drafting guidelines in the formulation of provincial agricultural data bases and in planning and monitoring of the Ministry's development activities. These guidelines were disseminated to local officials in training sessions/seminars in designated places in the regions.

BUREAU OF SOILS

Conserving the soil and water resources of the country for posterity has been and still remains the primary role of the Bureau of Soils. Corollary to this, determining better ways of utilizing these invaluable resources in conjunction with integrated area development thrusts of the Ministry of Agriculture as well as with other line ministries/agencies and with the private sector is the Bureau's

immediate concern. Accordingly, its CY 1982 budget and manpower resources were geared to soil and water conservation and development projects and activities.

One of the projects pursued by the Bureau of Soils for the year just ended was water impounding which is surface-runoff, specially voluminous during heavy rainfall specifically over non-forested and/or cultivated slopes, caught and impounded in dams having structural heights of not more than 30 meters and/or volume storage not exceeding five million cubic meters. Water-impounding structures minimize soil erosion by providing controllable water for irrigated paddy rice and multiple cropping, water for livestock and fish culture and for recreation. In 1982, one structure was completed in Region I from the general fund and seven structures in Region VI under the International Bank for Rural Development (IBRD) loan-assisted project. These eight water impounding structures benefited 240 farmers and brought under irrigation about 380 hectares.

Feasibility studies for national water impounding projects under rainfed agricultural development were also undertaken. At the close of CY 1982, 63 sites were found feasible for small water impounding structures in the 12 regions with an aggregate service area of about 3,220 hectares.

Soil conservation activities in support of the food production and nutrition program entailed extensive and intensive cultivation of arable lands throughout the country exemplified by multiple cropping, rice-fish culture and the integration of cattle grazing in coconut areas. These stepped-up food production endeavors called for soil conservation measures namely vegetative and mechanical means. Under vegetative means, the practices introduced to farmers were cover cropping, buffer strip planting, strip cropping and crop rotation which singly or severally involved some 9,000 hectares. Some 3,200 hectares were placed under mechanical means of controlling soil erosion consisting only of contouring and terracing and excluding farm ponds or water impounding structures.

To determine better ways of utilizing soil resources, detailed and semi-detailed soil surveys were conducted in areas tabulated as follows:

Site	Agency Served	Area (ha.)
a) Bataraza, Palawan	Bureau of Lands	13,689
b) Iwahig, Puerto Princesa, Palawan	MA, R-4	500
c) Lungsod Silangan Newtown Site, Rizal and Laguna Province (Module 3)	Ministry of Human Settlements (MHS)	8,967
d) Rizal and Bulacan Provinces (Module 1)	MHS	17,570
e) Lungsod Silangan Multi-Crop Farm Project, Tanay, Rizal	MHS	8
f) Bulacan Province	MA, R-3	260,800
g) Rizal Province	MA, R-4	204,870
Total		606,404

conducted such evaluation in the following provinces:

Site	In Conjunction With	Area (ha.)
a) Davao del Sur	Provincial Dev. Staff	637,762
b) Davao del Norte	Provincial Dev. Staff	812,980
c) Zamboanga del Sur	Philippine-Australian Dev. Assistance Program	992,210
Total —		2,442,952

Soil, in contrast to land, refers to a collection of natural bodies with depth and breadth and characteristics which may be indirectly related to their present vegetation and use. On the other hand, land resources connote the soil characteristics together with other attributes such as climate, topography, drainage, irrigation water supply, its location with respect to centers of population, communication networks and transportation services. Thus, under the integrated area development program wherein soil and land resources evaluation is a basic activity, the Bureau of Soils in 1982

Hand in hand with the study of different soil types was a program of activities in conjunction with or supportive to the food production program, specifically such components being implemented by line and/or research agencies/entities such as the Unified Rice and Research Training Information Program (URARTIP), Philippine Atmospheric, Geophysical and Astronomical Services Administration (PAGASA) and National Food and Agriculture Council (NFAC). The activities and the corresponding work units started and completed throughout the country are enumerated hereunder:

Activity	Unit of Work
a) Soil Fertility Investigation	334 trials
b) Multiple Cropping	26 demonstrations
c) Field Fertilizer Verification	104 trials
d) Compost Making and Usage	100 demonstrations
e) Azolla Propagation and Verification	64 trials
f) Updating Soil Fertility Maps by Municipality	9 maps

Soil analysis in support to the food production program concerning the judicious use of fertilizers by farmers, the chemical and physical characterization of soils in land reform areas and in integrated-area-development projects for better and meaningful planning towards agriculture growth and self-sufficiency were the salient contributions of the soil laboratory services. Tabulated hereunder are



various soil laboratory activities and the corresponding work units accomplished:

Activity	Work Unit
a) Soil Testing (NPK)	40,017 samples
b) Alkalinity/Salinity Test	3,285 samples
c) Trace Elements Determination	4,478 samples
d) Soil Physical and Chemical Characterization	8,397 samples
e) Special Assay (Fertilizer and Plant Tissue)	3,689 samples
f) Irrigation Water Analysis	2,190 samples
g) Production and Distribution of Soil Inoculant	12,414 packets

In the area of map making/reproduction, photo composition/reproduction, and printing of technical reports, bulletins and journals, the Bureau rendered these types of cartographic and printing services for the Ministry of Agriculture, Ministry of Human Settlements, various regional/provincial development staffs, as well as several integrated area development programs wherein various maps and reports were needed as inputs or outputs.

BUREAU OF COOPERATIVES DEVELOPMENT

In Calendar Year 1982, the Bureau of Cooperatives Development registered and supervised a total of 2,797 cooperatives. Considering that the Bureau has been actively promoting the establishment of cooperatives for the past decade, registration of new 630 cooperatives, 25 Cooperative Rural Banks (CRBs), 53 Area Marketing Cooperatives (AMCs), 35 Federations and 38 unions during the year is indicative of the credibility and acceptability of the cooperative movement.

The Cooperative Marketing Project (CMP), a joint project of the Philippine Government and the United States Agency for International Development (USAID), was extended up to March 31, 1983. Following the evaluation of the project conducted by the Economic Development Foundation in 1981, the CMP revised the Implementation and Financial Plan of the project to be more responsive to the cooperative program. Approved on September 16, 1982, the plan has the following maps revisions, namely:

- 1) Expansion of the project description to include financing of Samahang Nayons, Regional Marketing Cooperatives, and other cooperatives; and
- 2) Inclusion of the National Food Authority in the Inter-Agency Coordinating Committee in lieu of the Cooperative Marketing System of the Philippines.

The CMPs accomplishments for CY 1982 included 1) the granting of loans to seven Area Marketing Cooperatives (AMCs) and cooperatives totalling P15.96 million; 2) rendering management and technical assistance to 7 Area Marketing Cooperatives (AMCs) and 3 Cooperative Rural Banks (CRBs), including the installation of the new Uniform Accounting and Management Reporting System; 3) the sending of 35 staff members of the different implementing agencies and beneficiaries (AMCs and CRBs) to non-degree trainings abroad under the Integrated Agricultural Production and Marketing Project, and; 4) the conduct of orientation seminars to 2,156 cooperative members.

The Samahang Nayon Support Project (SNSP) has covered nine provinces involving 17 municipalities and 150 Samahang Nayons. For the period under review, the SNSP approved 250 loan applications amounting to P3,436,198. As of December 1982, SNSP collected P224,356.25 in amortization payments and P2,145 in interest payments reflecting a 64% repayment of loans for the period. The SNSP also conducted trainings for technicians and SN members on the proper documentation of project activities and status thru the method of case study writing. It has also installed SN Book of Accounts in 11 provinces covering 44 SNs. The SNSP also rendered direct technical assistance to 5 SNs.

The Rural Improvement Clubs (RICs) in cooperatives projects which was introduced in the middle of 1982 is still in its organizational phase. However, as of December 1982, 16 RICs have been organized into cooperatives (mostly producers cooperatives). The Cooperative Development Loan Fund (CDLF) has initially allocated P1.5 million for the economic project of the economic project of the women-cooperatives. Of this amount, P50,000 has already been loaned out to an RIC-cooperative in Zambales. The scope of the

project has been expanded to cover all rural women.

The Bureau drew up a five-year Cooperatives Development Program in areas covered by the Integrated Estate Development Project (IEDP) of the Ministry of Agriculture, Land Bank of the Philippines, Ministry of Agrarian Reform, and the National Food Authority. The cooperative is envisioned to involve its members in planning and undertaking the production, post-harvest, and marketing activities of the estate. Each IEDP project area covers from 500 to 1,000 hectares which holds 300 to 500 farmers grouped into 3 to 4 SNs. The IEDP has already established 60 project areas, 32 of which are in Luzon and 26 located in other parts of the country.

The responsibility of implementing the Samahang Nayan Action Support to Kilusang Kabuhayan at Kaunlaran (SNAP-KKK) was transferred to BCOD on October 16, 1982 from the Ministry of Agriculture as per Memorandum Circular No. 5, series of 1982. Thus, SNAP-KKK exhausted the last quarter to project assessment and loan extension.

To better achieve the goal of raising income and productivity levels in the Muslim region, the President issued on January 13, 1982, Executive Order No. 69 and L.O.I. No. 138 creating the Regional Cooperative Development Assistance Office (RCDAO). The maintenance of close coordination and healthy support between RCDAO and BCOD resulted in a one-year cooperative development program.

On October to November, 1982, the Bureau conducted an operational and evaluation survey to ascertain the impact of the BCOD's programs and projects on its clientele. The result of the survey was deemed useful to determine if there exists any need to change guidelines or plans in the SN program. The survey questions revolved around the effectivity, observed gaps, and gave recommendations on the Samahang Nayons, the Area Marketing Cooperatives and the Cooperative Rural Banks.

FIBER DEVELOPMENT AUTHORITY

The fiber industry has been one of the country's traditional foreign exchange earners. Despite the

global economic downtrend generated by inflation and recession, the fiber industry has managed to weather the storm. In abaca and abaca manufactures alone, it has contributed to the nation's economy in the form of revenue derived from export earnings, which has stayed close to a yearly \$60 million level from 1979 up to the present.

The creation by the President of the Fiber Development Authority (FiDA) under Executive Order No. 709 on July 27, 1981, therefore, is a timely and fitting response to the growing needs of the fiber industry now besieged by debilitating forces and an uncertain and fickle world market for fiber-based products. As sole agency for the development, promotion and regulation of all indigenous fibers, FiDA has restructured its budget and program activities after it has become operational in July 1982 to accelerate the development of the fiber industry.

In response to the vital needs of the industry, the Authority identified five basic policy thrusts, namely: a) increased productivity; b) improved and diversified new uses of fiber; c) diversified and expanded market base; d) rationalized trade regulation and control measures; and e) stabilized fiber prices and projected increase in farmers' income.

For the year under review, the Authority undertook 12 fiber crop research projects and 16 study visits under the defunct AIDA were continued in the different field and research centers of the Authority. Of these total number, two research studies were completed: 1) socio-economic study entitled "Establishment of Social Laboratory Involving Abaca Farmers" in Mauraro, Guinobatan, Albay, and 2) "Variety x Fertilizer x Population" in Abuyog, Leyte.

To increase farm yields, the Authority developed and maintained 65.2 hectares of abaca seedbanks which produced 209,000 HYV abaca seedpieces, of which 80,000 or 30 per cent were distributed free to recipient farmer-cooperators. On the other hand, 21 other fiber crops were collected, planted and maintained in the fiber seedbanks of the Authority. To further expand the agency's technology generating capability, three new regional experiment stations were opened with a total land area of 60 hectares, thereby increasing to ten the number of FiDA seedbanks/experiment stations.

On fiber utilization and technology development, five product development researches were continued in cooperation with some government agencies such as the Forest Product Research and Development Institute (FPRDI), UP at Los Banos, and the Bureau of Plant Industry. The Authority also undertook two engineering design processes aimed at improving the present fiber extraction machine for maguey and buntal fibers. Likewise, a pilot project for the use of stripping knives was also started. Other activities were focused on the extensive study of physical, chemical and morphological properties of indigenous fibers.

On marketing development for fiber and its end-products, the Authority maintained close rapport with all sectors of the fiber industry by providing both the private and public sectors with relevant and pertinent information on fiber prices trends, demand, and supply. In relation to this, six major studies were undertaken during the year. A fact-finding mission was sent by FiDA to some European and Asian countries, as well as to the United States of America, to undertake an in-depth study of the market for fiber, pulp and paper products. This strengthened Philippine relations with said countries and fostered direct access to major markets in the Southeast Asia and Australia.

Under the new FiDA set-up, the extension and technical services delivery had increased its regional coverage from five to nine regions. Some 3,907 fiber farmers were served through regular farm visits while 415 farmers' meetings were conducted with the participation of 2,760 farmers.

The Authority continues to strictly enforce its regulatory laws to ensure the competitiveness and world-wide acceptability of Philippine fibers. For the period under review, the volume of inspected abaca and other fibers totalled 535,244 bales/bundles. Of these figures, 284,432 bales or 53 per cent were approved for foreign consumption; 236,649 bales/bundles or 44 per cent for local consumption; 14,235 bales/bundles or 2.6 per cent were reclassified from previously approved bales/bundles; and the rest were condemned. Initial income collected from inspection fees totalled P1.6 million.

For the year 1982, the FiDA has issued permits and licenses to 874 fiber participants which genera-

ted an income amounting to P131,845. Compared to last year, fiber participants increased by 5.5 per cent, while license fees increased by 12.4 per cent. To facilitate the identification of unlicensed establishments and to monitor their activities, the Authority made an update of the "Directory of Fiber Participants."

PHILIPPINE VIRGINIA TOBACCO ADMINISTRATION

The vitality that characterized PVTA's drive to accelerate the transfer of technology during the past few years resulted in an unprecedented demand and increase in the process of Virginia or flue-cured tobacco in 1982.

During the year in review, an aggregate of 12,289,294 kilograms of tobacco was shipped to at least 14 tobacco-importing countries. These total export shipments correspond to 20 per cent of the total production for the current year, while Virginia and Burley tobacco exports covered 25 per cent and 3 per cent of each type's corresponding annual production. In relation to 1981's tobacco export earnings, it may be gleaned that the current year's revenues went up from P217 million in 1981 to P221.9 million in 1982, or an increase of 2.23 per cent. In spite of the noted decrease in the total volume of exports by 86 per cent, its corresponding export value increased by 97 per cent.

The start of the year 1982 was marked by the beginning of trading operations. In the first quarter alone, a total of 18,778,999.9 kilos of Virginia tobacco valued at P211,651,351 was purchased by 106 trading centers in Virginia tobacco-producing areas. Likewise, 891,407 kilos valued at P4,656,197.65 were purchased at 28 breeding centers in Burley-producing provinces. For the year in review, a total of 60,204,841.9 kilograms with a total value of P574,032,580.62 was purchased from 134 licensed tobacco trading centers. A remarkable increase of 19 per cent was attained in Virginia and Burley tobacco production in 1982 over the previous year's output of 50,729,600.95 kilos of said types of tobacco and an increment of 42 per cent in purchase value from P405,495,226.65 in 1981 to P574,032,580.62 in 1982. All these were attributed to the increased production of high-quality tobacco and higher floor and buying prices.

Two of the continuing special financing programs of the PVTA, known as the Integrated Agricultural Financing (IAF) and the Aromatic Tobacco Trading Loan Fund (ATTLF), have continued to extend loans and provide operating funds to exporters, cigarette manufacturers, and trading center operators. During the year in review, the IAF, in close cooperation with the Central Bank, released a total amount of P10 million to 4,428 Virginia and Burley tobacco farmers in Ilocos Norte, Ilocos Sur, La Union, Pangasinan and Tarlac, cultivating 4,306.6 hectares. On the other hand, the ATTLF which complements PVTA's IAF lending scheme in close collaboration with Central Bank and other commercial banks (Manila Banking Corporation, Philippine Bank of Communication and the Consolidated Bank and Trust Corporation), granted no less than P13 million to tobacco end-users and 16 trading center operators.

The PVTA has consistently been expanding its research programs both basic and applied, on all aspects of the industry by conducting a series of research projects in coordination with the UP at Los Banos. Started two years ago, the PVTA-UPLB Research and Manpower Development Program developed research studies covering three major areas of crop growing, to wit: crop physiology, soils and plant breeding. This year, the PVTA again conducted 17 research studies in its different provincial research stations, 8 of which were completed and the rest are on-going.

Another program, among others, relentlessly pursued by the PVTA during the year in review is the so-called "purchase commitment," aimed at providing yearly adequate protection to tobacco farmers from unscrupulous and exploitative trading practices. This is sort of an agreement entered into by and between the PVTA and buyers' group, represented by their mother unit — the Philippine Aromatic Tobacco Development Association (PATDA) — before the start of the trading season. This scheme did not only provide and ensure a ready market for the farmers' produce but also protect them from unfair buying, thereby providing them the full benefits of the tobacco floor prices.

For the year 1982, these purchase commitments were augmented to 40 million kilos for Virginia tobacco and 10 million kilos for Burley tobacco.

PHILIPPINE TOBACCO ADMINISTRATION

The year 1982 was the period when the Philippine Tobacco Administration firmed up its ten-year development plan to revitalize a distressed cigar (native) tobacco industry and seek a stable and adequate source of funds to finance and implement its programs and projects.

In spite of the manpower shortfalls as conditioned by its weak financial base in Calendar Year 1982, the PTA was able to function and come up with laudable though token performance.

Efforts towards increasing yield and improving leaf quality were ably rewarded as indicated by the results of PTA cigar leaf tobacco buying activities for Crop Year 1982. Private L-3 dealers and buyers paid good prices and most often above the prescribed floor prices for middle (4b and 4c) and low (5a-6a) grades, thus enabling some farmers to reserve their high grades 1a-4a for good prices offered by the PTA.

For Crop Year 1982, production of cigar (native) leaf tobacco registered a total of 17,737,779 kgs. harvested from 15,337 hectares. The average yield from selected prime growing areas doubled than what has been obtained for the last five years of cigar tobacco on the national level.

Farm credit in the form of production and facility loan was provided cigar (native) tobacco growers. For the Year 1982-1983 tobacco cropping season, the PTA allocated P1.0 million for the purpose. In addition, the Ministry of Human Settlements under its KKK loaning program pledged to grant each PTA-accredited cigar (native) tobacco grower a production loan of P3,000. As of the end of CY 1982, P150,000 in production loans had been released from KKK loan funds to 50 cigar wrapper tobacco growers in Cabuyao, Ilocos Sur, while 150 loan applications were being processed in the 15 cigar tobacco-growing municipalities of Isabela. From PTA fund, 600 production applications were processed for loan releases. By the end of CY 1982, the PTA was able to collect, out of the previous years' outstanding balances, the amount of P41,882.05 in production loans and P59,504.01 in facility loans, or a total of P101,386.06.

The PTA tobacco market situation reports for CY 1982 indicated that the flue-cured base or

American blend type of cigarette was dominating the market for leaf tobacco products not only in industrialized countries but also in developing nations. Likewise, local aromatic cigarette manufacturers found that locally grown cigar (native) leaves could be a good substitute for the high-priced imported Burley and Oriental tobacco on blenders. Taking this as a cue, the PTA embarked on an experimental or laboratory manufacture of primarily cigar (native) leaf blended aromatic cigarettes and the purely native leaf-based dark cigarettes with the end in view that finished products could sell and easily compete with flue-cured based American blend cigarettes. Japan is now using cigar tobacco imported from the Philippines in one of their major American-blend cigarette branches. As of CY 1982, it was established that local aromatic cigarette manufacturers use some six million kilograms of native leaf tobacco, particularly the morado and liso types, or 14 per cent of their total annual raw material consumption.

FERTILIZER AND PESTICIDE AUTHORITY

Utilizing the broad goals of the Ministry of Agriculture as the springboard for its thrusts and programs, the Fertilizer and Pesticide Authority took a significant step towards contributing to the national development program in 1982. As a support agency of the Ministry of Agriculture, FPA has three roles: as a regulatory and policy-making agency, as a monitoring body and as a conduct for public education.

In 1982, local production reached 125,811 metric tons (MT) of NP/NPK fertilizers, 52.4% lower than the previous year's output. This was due to the high cost of production which rendered the two major fertilizer companies uncompetitive vis-a-vis finished fertilizer imports.

As in previous years, the agriculture sector relies heavily on imports to augment our local fertilizer supply. This year's importation was posted at 773,292,76 MT, which is 81.12% higher than the 426,900 MT imported in 1981. This was attributed to the increased demand and the reduced local production output.

At present, imports constitute 86% of our total supply with only 14% locally produced. In the Philippines, fertilizer cost plays a vital role in

influencing fertilizer usage. Studies show that farmers respond unfavorably to any increase in fertilizer price if no corresponding adjustment is made in the prices of the produce.

The fertilizer industry for 1982 showed an increase of 7.31% over 1981 at 842,734.57 MT. Notable increases were posted by urea, ammonium sulfate, amchlor and Di-ammonium phosphate while 14-14-14, 0-0-52 and 0-0-60 registered slight decreases. In terms of nutrients, nitrogen consumption increased by 10.5%, P_2O_5 increased by 9.3%, and K decreased by 5.6%.

On May 21, 1982, the fertilizer cash subsidy was lifted and at the same time, the FPA ex-warehouse prices were reduced for urea, 2.4%; 21-0-0, 4.3%; 25-0-0, 4.59%; and 0-0-60, by 4.58%. On the other hand, 14-14-14 was increased by 9.74%, while prices of other grades were maintained at their present levels. Price reduction was largely possible because the import cost of fertilizers decreased. Fertilizer companies were able to generate profits even under the reduced FPA ex-warehouse prices. While the cash subsidy was lifted effective May 21, 1982, 1981 carryover stocks sold after May 21, 1982 were still eligible for subsidy. To date, the 1982 claims filed by all fertilizer companies amounted to P44,293,979.00. FPA continues to allow indirect subsidy on importation of finished fertilizer and raw materials by granting tax and duty free exemptions according to volume allocation scheme.

To maximize effectiveness in the field, FPA now has four full-time regional coordinators and 20 full-time deputy regional coordinators throughout the entire country. FPA continues to deputize Provincial Program officers of the Ministry of Agriculture, BAEx and BPI in those provinces where FPA has no full-time personnel.

In July 1982, the Fertilizer Technical Committee (FTC) was created to assist FPA in the formulation of policies, program and decisions relating to the production, importation, marketing and utilization of both organic and inorganic fertilizers. This is composed of four sub-committees namely: Research and Development (R and D), Registration and Licensing (R and L), Marketing and Distribution (M and D), Monitoring, Documentation and Dissemination (MDD).

The FPA is presently programming a research study for the production of organic fertilizer using indigenous materials such as guano, lime, phosphate, manure or animal dropping, azolla, etc. These materials are being explored to complement inorganic fertilizer in dosages adaptable to high-yielding rice technologies. It is hoped that such a complementation program will result in a decline in demand for chemical fertilizers, thus easing up our country's dependence on expensive inorganic fertilizer.

Insofar as pesticide is concerned, importation for both technical materials and formulated products recorded in 1982 an aggregate volume of 9,297.15 MT valued at \$3,118,992,093. On the other hand, exportation summed up to 575.68 MT. Likewise, one of FPA's responsibilities is to process application for certificates of importation. Approval of such application is based on a set criteria or guidelines such as fulfillment of requirement on licensing, registration, classification of products, etc. For the year in review, there

were 934 applications received, out of which 594 applications were given certificates authorizing importation of pesticide. Applications for exportation totalled 31.

In product registration labelling, 101 pesticide active ingredients and 100 pesticide formulations for both household and agricultural pesticides were approved for full registration. Based on actual workload of 164 for active ingredients, 38% was not registered due to inability of the companies to comply fully with registration requirements. An active ingredient or formulation is processed for registration only upon submission of data on the product's bio-efficacy, toxicity and residual effects, to ensure the effectiveness of such product and safety of the same to the environment. It may be cited that FPA registration requirements are being further studied and considered for revision to meet with the international harmonization of pesticide registration requirements as set up by FAO in Rome last October, 1982.

The evaluation of pesticides is closely linked



to the registration process. Labels must be of such design and quality that do not easily deteriorate. Since pesticide users are enjoined to read labels before using, FPA requires companies to place precautionary information both in Pilipino and English languages. Under the new labeling scheme, color bands at the top or at the bottom are indicated for each type of pesticide — red for insecticides, blue for fungicides, green for herbicides and orange for other chemicals. Based on actual workload, 122 labels were fully evaluated by FPA in 1982.

To ensure the protection of the environment as well as the health and safety of the public, FPA re-classifies pesticide products and adds products in the list of restricted pesticides when necessary. In 1982, FPA came up with a proposed list re-classifying pesticide products into two categories: *restricted* and *banned*.

Previously, pesticide products came under restricted category only. In 1982, the recommended classification list for banned pesticide enumerates 20 compounds. In the 1982 recommended list of restricted pesticides, four active ingredients may not be imported unless ordered by FPA in cases of emergency; four may not be used for agricultural application; nine may be used only under specified limitations, and eight are fumigants and chemicals used only by licensed pest control operators.

To safeguard human health and environment, FPA required all pesticides tested in the Philippines to be covered by an Experimental Use Permit (EUP). Along this line FPA approved 202 EUPs.

During the year in review, to further strengthen its field network specially in the proper use and safe handling of pesticides as well as management of poisoning cases, the following training programs were conducted: the Pesticide Safety Seminar/Workshop for medical and paramedical personnel — 9 seminars in selected provinces in the country; the Pest Control Applicators Seminar — 20 training courses, nationwide in selected cities; the Agro-pesticides Dealers Training — 20 training courses, nationwide; and the Technicians Training — 74 seminars, nationwide.

PHILIPPINE COTTON CORPORATION

The Philippine Cotton Corporation (Philcotton),

a partnership between the Philippine Government and 22 local textile millers, was established to undertake, implement and supervise the commercial production of cotton in the Philippines. Now on its 10th year of operation, the Philcotton has truly shown that cotton could be a profitable crop for our farmers by applying proper inputs and technology.

Hereunder are the accomplishments of the Philcotton for Calendar Year 1982:

Area planted to cotton was 14,496 hectares, a 15% decrease from the previous crop year's 17,001 hectares. The decrease was due to two major factors: a) inclement weather — there were two typhoons, "Rubing" and "Anding", which hit many cotton areas; and b) Philcotton's policy of very selective screening of areas to be planted to cotton.

Notwithstanding the hectareage shortfall, the crop year registered a record harvest of 13,630 metric tons of seedcotton, 11 percent more than that of the previous year. This was purchased by the Corporation at P4.50 per kilogram for a total amount of P61 million from about 18,600 farmer-cooperators in 32 provinces.

Compared to last crop season's average seed-cotton yield of 750 kilograms per hectare, this year's performance of 950 kilograms per hectare represents an increase of 27 percent. Forty outstanding cotton growers posted an average yield of 4 metric tons per hectare. The most outstanding cotton grower registered 6.9 metric tons per hectare and earned a net income of P53,100 from his two hectare farm. The high yield average has been attributed to stricter selectivity of farms, planting within schedule, clustering of farms for effective pest control and more precise application of pesticides.

The purchased seedcotton was processed into 5,183 MT or 22,000 bales of lint, making it the highest production ever achieved in the country. Total cottonseed volume is estimated at 8,240 MT.

The number of financing institutions supporting the program increased to 164 from 144 of the previous year. Total production loans granted to farmers amounted to P51 million.

Some 373 extension technicians and specialists

were fielded to service more than 18,000 farmer-cooperators in the nine Philcotton areas of operations.

In addition to research and development assistance from the Cotton Research and Development Institute (CRDI), Philcotton was supported by the French technical assistance program on seed multiplication and varietal improvement and by the RP-German Cotton project along pest management through a surveillance and early warning system (SEWS).

PHILIPPINE DAIRY CORPORATION

For Calendar Year 1982, the Philippine Dairy Corporation's (PDC) artificial insemination (AI) campaign under the Smallholder Livestock Improvement Project (SLIP) accomplished a satisfactory 83 per cent of its target goal. The SLIP areas made a homestretch spurt in December and made up for artificial insemination performance slumps during the rainy months and the periods of semen and hormone shortages. In December alone, the AI drive posted a 102 per cent accomplishment in both cow and caracow insemination and an impressive 111 per cent in cow insemination. All in all, Philippine Dairy Corporation inseminated 7,560 of the 8,912 animals targetted by the Smallholder Livestock Improvement Project in 1982. Of the inseminated animals, 7,022 were cows and 380 caracows. This entailed the diagnosis of 12,087 animals belong to 7,523 cooperators in 368 barangays of 69 towns in 12 provinces. Of the animals diagnosed, PDC heat synchronized 7,646 head.

In Northern Mindanao where AI started operating only on April 12, 1982, a total of 2,973 cows was inseminated. Southern Tagalog which began operations only on March 16, 1982 inseminated 2,048 cows. Five more provinces were included in the SLIP operations in the later part of the year. Already, 309 animals were inseminated in these areas. The new areas are: Ilocos Norte and Ilocos Sur that began on October 17, 1982. On November 16, 1982, the Rizal province drive began under the KKK project; in Leyte, the drive started on December 15, 1982, and in Sorsogon, the drive began on December 17, 1982.

Under the Dairy Contract Breeding Agreement (DCBA), 962 cows in ranches were inseminated,

554 cows of which were inseminated in Mindanao, 313 in Mindoro, and 95 in Masbate. Selected for the upgrading program were 2,017 breedable cows in Mindanao ranches and 100 were in Negros Occidental ranches.

The PDC dispersed 31 pregnant heifers in two dispersal areas. The first batch consisting of 15 crossbreeds (50 Holstein Freisian), 33 Brahman and 17 Sta. Gertrudes, was dispersed in Malvar, Batangas on June this year to members of the Kilusang Kabuhayan sa Paggagatas ng Malvar, Ink. The second batch, 16 crossbreeds with the same bloodlines, was dispersed in October to members of the Kilusang Kabuhayan sa Paggagatas ng Bautista, Ink. in San Pablo City. There were 26 recipients of the dispersed animals. Of the 15 pregnant heifers distributed, one died and 13 have calved (5 males and 8 females) of the pregnant heifers dispersed in Malvar. All cows are now producing milk.

On cooperatives development, PDC organized 13 dairy cooperatives with a combined membership of 390 in 14 barangays of 12 towns in 1982. Of these 13 cooperatives, eight are in Northern Mindanao and five are in Southern Tagalog. Six are entirely new organizations while seven are conversions of existing Samahang Nayons into dairy through the creation of a special dairy fund.

All 13 cooperatives have undergone pre-membership training under the PDC supervision in coordination with the Bureau of Cooperatives Development of the Ministry of Agriculture. Included were two cooperatives operating PDC's two dairy animal dispersal areas, namely, the Kilusang Bayan sa Paggagatas ng Bautista, Ink. in San Pablo City and the Kilusang Kabuhayan sa Paggagatas ng Malvar, Ink. in Batangas.

On forage development which became operational in August, this year, a total of 22.5 hectares was planted to grass and legumes in 74 barangays of 24 towns in the three major Smallholder Improvement Project areas, distributed as follows: 8.5 hectares in Western Pangasinan, 4.8 hectares in Southern Tagalog, and 9.2 hectares in Northern Mindanao. On the other hand, 619 cooperators (25 in Western Pangasinan, 155 in Southern Tagalog and 439 in Northern Mindanao) participated in the forage campaign to complement waste fodder available in the SLIP areas. Fodder conservation was also taught to the farmers to save excess feeds

during the rainy season for use during the dry season.

Livestock enumeration survey was also conducted in eight provinces in Luzon and Visayas, 722 barangays in 177 municipalities in La Union, Abra, Cagayan and Nueva Ecija in Luzon and Iloilo, Negros Oriental, Bohol and Cebu in the Visayas. Complete returns of the survey showed that there were 26,465 breedable cattle and carabaos in the said areas. Of this number, 14,229 head or 39 per cent are cattle and 22,236 head or 61 per cent are carabaos. Of barangays surveyed, 263 qualified for cattle upgrading and 362 for carabao upgrading.

Good rapport has already been established by the Philippine Dairy Corporation with other government and private agencies and universities also involved in the national dairy development program. The Central Luzon State University (CLSU), the Central Mindanao University (CMU), the Dairy Training and Research Institute (DTRI),

the National Science and Technology Authority (NSTA), the National Artificial Breeding Center (NABC), the Philippine Council for Agricultural Resources Research and Development (PCARRD), and the UP at Los Banos (UPLB) have provided their facilities, training, expert services and consultancy, in general, now form as integral part of the program. The Bureau of Animal Industry (BAI), the Ministry of Foreign Affairs (MFA), the National Economic and Development Authority (NEDA), the Ministry of the Budget and the Ministry of Agriculture have rendered their full support in the different undertakings of the corporation. Milk processors, small dairy farmers and ranchers have also shown cooperation and enthusiasm in supporting the National Dairy Program.

A total budget of P6.4 million was received by the corporation for the year 1982 as well as the delayed releases for CY 1981.



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